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# New Competitive Strategies Tools and Methodologies

## *Volume I*

## *Review of the Department of Defense Competitive Strategies Initiative 1986-1990*

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David J. Andre
Science Applications International Corporation
1710 Goodridge Drive
McLean, VA 22102

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This report reviews the Department of Defense (DoD) Competitive Strategies Initiative (CSI) from 1986, when it was formally inaugurated by Secretary of Defense Caspar Weinberger, to the present. The principal focus is an assessment of four major analytic efforts undertaken to support the CSI, namely: Task Force I (mid- to high-intensity global conventional war centered in NATO Europe), Task Force II (U.S. non-nuclear strategic capabilities), the joint War Game Committee's work in determining the validity of the strategies proposed by Task Force I, and the follow-on program of gaming and computer-based combat simulation modeling. Particular attention is given to the analytic methods, tools, techniques, and measures of merit used, including their strengths and weaknesses. Lessons learned are distilled for the purpose of informing future competition planning activities in the DoD and for helping guide the next phase of the present three-phase SAIC program of research and analysis.

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## SUMMARY

This report reviews the Department of Defense (DoD) Competitive Strategies Initiative (CSI) from 1986, when it was formally inaugurated by Secretary of Defense Caspar Weinberger, to the present, highlighted by meetings of the Competitive Strategies Senior Review Group. This body was impaneled by the Under Secretary of Defense for Policy in July 1990 to identify ways of adapting the original competitive strategies concept and to make recommendations to the Secretary on how to proceed.

The principal focus of this report is an assessment of selected major analytic efforts undertaken to support the Competitive Strategies Initiative. Particular attention is given to the analytic methods, tools, techniques, and measures of merit used, including their relative strengths and weaknesses. Lessons learned are distilled for the purpose of informing future competition planning activities in the DoD and for helping guide the next phase of the present three-phase program of research and analysis.

Inasmuch as the volume as a whole addresses past applications of competitive strategies in the Department of Defense, it is important to understand how the department, in particular the Office of the Secretary of Defense (OSD), perceived, defined, and then implemented competitive strategies. With this in mind, Chapter 1 reviews the history of the DoD Competitive Strategies Initiative, including the basic concept and methodology, as well as the organizational structure and the management system adopted by the department. The seminal contributions of Andrew W. Marshall, since 1974 the Director of Net Assessment in OSD, are discussed, beginning with his initial interest in long-range strategic competition planning dating to the late 1960's while at the RAND Corporation.

Chapter 2 outlines chronologically the overall DoD competitive strategies process, the defining events that transpired, and the analyses conducted, including the key conclusions rendered, under the aegis of competitive strategies between 1986 and 1990. The work of the two competitive strategies task forces, the War Game Committee, and the involvement and contributions of other key organizations are highlighted. The chapter concludes with a discussion of how, by the end of the Reagan administration, it was

becoming necessary to adapt competitive strategies to new global strategic realities, but how, in spite of the useful work that had been accomplished over a three year period, the initiative came to be all but dissolved. Notwithstanding strong support from (then) Vice President George Bush during the 1988 presidential campaign, fully two years ago now, and (then) Senator Dan Quayle even earlier, the DoD still awaits a formal decision on whether, and then how, to proceed with competitive strategies.

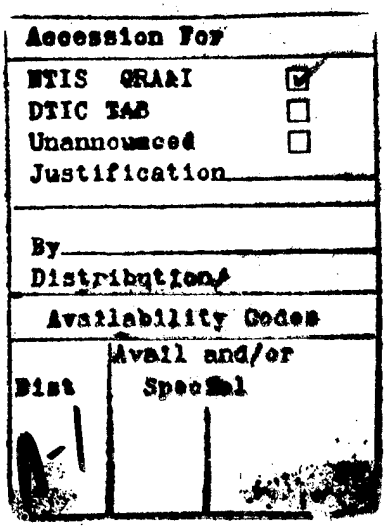
Competitive strategies places heavy demands on defense analysis, both the codified body of professional knowledge and its practitioners. Chapter 3, a review and adaptation of earlier conceptual and methodological work done by SAIC to support competition planning in the DoD, links Chapters 1 and 2 with Chapter 4, which assesses selected major phases of the analytic work done as part of competitive strategies. It does this by discussing key concepts in competition planning; proposing a four-layer, hierarchical planning model and a systematic planning sequence; enumerating and describing nine sequential functions or requirements that analysis must be able to carry out in order to support competition planning; and describing and evaluating nine general classes of analysis tools currently available to assist competition planning. It concludes that, of all of the analytic tools surveyed, four appear to have the greatest potential to support competitive strategies: military balance assessments, Soviet-style analysis and other forms of emulative analyses, competition planning games, and military contingency analyses.

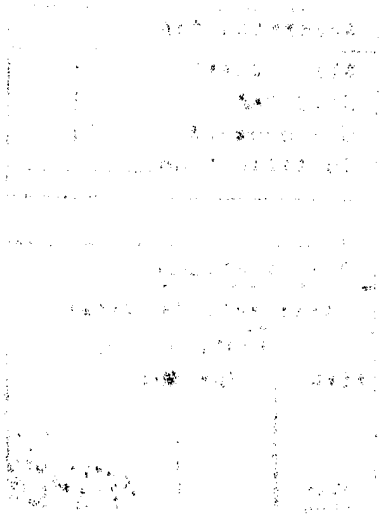
Chapter 4 provides an assessment of four major analysis efforts executed as part of the DoD Competitive Strategies Initiative: Task Force I (mid- to high-intensity global conventional war centered in NATO Europe), Task Force II (U.S. non-nuclear strategic capabilities), the joint War Game Committee's work in determining the validity of the strategies proposed by Task Force I, and the follow-on program of gaming and computer-based combat simulation modeling. The approach adopted involves an examination of how well, considering the four major analyses of interest, the nine analytic functions or requirements were addressed using the nine potentially available classes of analysis tools discussed in Chapter 3. In addition, comments are offered with respect to selected aspects of the support to competitive strategies provided by the intelligence community, the selection and use of measures of merit, and the future of gaming and simulation in assisting competition planning and analysis.

The study ends with a distillation of major lessons learned/conclusions in Chapter 5. The following recommendations are made with respect to the conduct of the next phase of the present three-phase program of research and analysis:

- Research should be aimed at improving the four analysis tools that have the greatest potential for supporting long-range competition planning: military balance assessments, Soviet-style analysis and other forms of emulative analyses, competition planning games, and military contingency analyses.

- Special attention should be directed toward improving the selection and use of analytic measures in competition planning.





## PREFACE

The Department of Defense's Competitive Strategies Initiative was formally inaugurated by Secretary Caspar Weinberger in 1986. He then worked to institutionalize the program in the day-to-day strategic planning activities of the department. His successor, Secretary Frank Carlucci, initially continued the institutionalization process. However, by the time of his departure at end the Reagan administration, in January 1989, the initiative had fallen out of favor and had essentially ceased to function. As this report goes to press, Secretary Richard Cheney, with the assistance of the Competitive Strategies Senior Review Group, is exploring ways of adapting the original competitive strategies concept to take better account of recent dramatic developments in the Soviet Union and Eastern Europe and, more generally, the rapidly changing nature of the strategic environment facing the United States in the decade of the 1990's and into the 21st Century.

The Department of Defense and, to a lesser extent, the national security community at large now have almost five years of experience with competitive strategies. Much good work, both theoretical and practical, has been accomplished, experience has been gained, and a variety of useful lessons have been learned. Regardless of how the DoD decides to pursue competitive strategies in the time ahead, there is a need to continue to develop and refine still further many aspects of the program, drawing on what has been learned over the last five years.

As part of the DoD effort to determine how to compete more effectively with the Soviet Union and others in the international arena, Science Applications International Corporation (SAIC) has been under contract since 1985 to carry out research on the nature of the U.S.-Soviet long-term military competition and on improved means for developing and implementing strategies for this competition. Although the focus of this research has been on the military aspect of the competition, it also has taken account of the political, economic, technological, and ideological dimensions of national power. Moreover, this research has encompassed broad national strategy as well as specific military missions or tasks and has been directed at planning concepts and methods, rather than at devising specific strategies. Thus, to this point, the SAIC work has sought to improve the context

and methods for DoD competitive strategies development, but has not duplicated planning efforts carried out by the Department of Defense.

The present program of research on new competitive strategies tools and methodologies was sponsored by the Office of the Under Secretary of Defense (Policy) in support of the Competitive Strategies Office, OUSD(P), under contract MDA903-90-C-0226.

The program will be executed in three phases.

- Phase I, whose results are reported in this first volume, reviews and analyzes existing applications of the competitive strategies methodology to defense planning during the period 1986 to 1990.

- Phase II will seek to identify new analysis tools, techniques, and measures of merit that may be of use in future competitive strategies planning and analysis. Included in the methodological elements to be addressed are organizational structures, techniques for searching for plausible U.S. strategy options, models (both hardware and software), and measures of merit. The tools developed will be evaluated in terms of their applicability to both bilateral and multilateral competition and both global and regional power relationships.

- The objective of Phase III is to apply the methodology developed in Phase II to a specific area of competition where important U.S. interests are involved. The analysis will provide both substantive comments on the U.S. conduct of the competition and refinement of the methodology defined in Phase II.

Dr. J. J. Martin is the principal investigator for SAIC's research on new competitive strategies tools and methodologies. Dr. David J. Andre is the author of this volume.

The author wishes to thank the following for reading earlier versions of this report and providing many helpful comments: Captain Jerome Burke, United States Navy; Dr. Frederick Giessler; Judith Grange; Michael McCune; and Ronald St. Martin. Other valuable assistance was rendered by Jay Dutcher; Gail Geidl; Colonel Clifford Krieger, United States Air Force; Lieutenant Colonel Bruce MacDonald, United States Air Force; Susan Marquis; Andrew Marshall; Captain Jerome Murphy, United States Navy; and Barry Watts. Most of these contributors were either directly or indirectly involved, and in some cases continue to be involved, in the DoD Competitive Strategies Initiative.

The views, opinions, and findings contained in this report are those of the author and should not be construed as an official SAIC or Department of Defense position, policy, or decision, unless so indicated by other official documentation.

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# 1. THE DEPARTMENT OF DEFENSE COMPETITIVE STRATEGIES INITIATIVE

The term "competitive strategies" has come to mean different things to different people. Inasmuch as this report focuses on past applications of competitive strategies in the Department of Defense (DoD), it is important to understand from the outset how the department, in particular the Office of the Secretary of Defense (OSD), perceived, defined, and then implemented the concept. By discussing the basic competitive strategies concept and methodology and describing the organizational and management approaches adopted, this chapter sets the stage for a review and assessment of the DoD Competitive Strategies Initiative, as it was formally executed during the period 1986-1990.

## 1.1 HISTORICAL BACKGROUND

On February 5, 1986, in his *Annual Report to the Congress for Fiscal Year 1987*, Secretary of Defense Caspar Weinberger announced, "I have decided to make competitive strategies a major theme of the Department of Defense during the remainder of this Administration."[1] Later that spring, in *Foreign Affairs*, he noted, "Implementation of our overarching strategy of secure deterrence requires an array of strategies that capitalize on our advantages and exploit our adversaries' weaknesses."[2] Then, on August 12, 1986, in a memorandum to the DoD's senior civilian and military leadership entitled, "Implementing Competitive Strategies," he stated, "My major objective in the next few years is to institutionalize competitive thinking throughout the Department of Defense."[3] This was followed, on January 9, 1987, by a memorandum in which he discussed the basic concept of competitive strategies, outlined an initial operational plan, and assigned management responsibility for institutionalizing competitive strategies within the department.[4] Thus was born "Competitive Strategies for the Long-Term Competition with the Soviet Union" or, more simply, the DoD Competitive Strategies Initiative (CSI).

Competitive strategies first came to public attention only a few years ago. As it has been practiced in the DoD, however, it has relatively deep roots. At the broadest level of national strategy, discussions of U.S. strategy for competing with the Soviet Union began in the late 1940's, when it had become clear that our relations with the Soviets

had begun to change fundamentally for the worst and that there was little or no prospect of a favorable turn of events in the foreseeable future.

Studied interest in systematic planning for competing with the Soviets over the long term waned until 1968, when Andrew W. Marshall (since 1974, the first and only Director of Net Assessment in the Office of the Secretary of Defense) replaced James Schlesinger as Director of Strategic Studies at the RAND Corporation in Santa Monica, California. Marshall's quest for a framework for structuring and giving direction to RAND's program of strategic studies led to his publication, in April 1972, of a report entitled, *Long Term Competition with the Soviets; A Framework for Analysis.*[5] This paper, a seminal contribution to U.S. strategic thinking in the post-World War II era, was strongly influenced by Marshall's interest, beginning in the early 1960's, in the subject of organizational behavior and in the efforts at the Harvard Business School to develop the field of business policy and strategy. Dr. Graham Allison, a colleague at RAND, shared Marshall's interests in organizational behavior and planning more deliberately for the long-term competition with the Soviet Union. Two decades later, he would play a key role in getting Marshall's ideas implemented in the DoD by Caspar Weinberger.

Marshall concluded that, what one saw immediately in thinking about U.S. relations with the Soviets, was a continuing, essentially endless, military-economic-political competition. Whether or not we were conscious of it, we and the Soviets had implicit strategies for guiding our actions in this competition, within which each side tended to emphasize different things based on our respective appreciations of relative strengths and weaknesses. Moreover, and very importantly (then and now), this competition would proceed constrained by resource limitations on both sides. Thus, before deciding on the acquisition of a particular weapon system in a given mission area, a more important question had to be raised, namely: What is an appropriate and advantageous strategy for this area of the continuing competition? This led logically to a consideration of overarching, long-term interests and goals as to how the competition should evolve -- its pace, scope, degree of stability, and ultimate outcome. Related to this, we needed to be efficient in the sense of achieving our goals at less cost than the Soviets would incur in achieving theirs.

Productivity

In the context of the history of American strategic culture, this kind of thinking by Marshall and his colleagues (including James Roche, George Pickett, Jeffrey McKitrick, and others) raised a whole series of first-order questions that, although highly relevant, were seldom addressed by the DoD and by the defense analytic community at large. Moreover, many kinds of issues that were being investigated in the systems analysis studies being conducted at the time were seen in a new light and were transformed when put into a different context. It was, then, this rich, pioneering intellectual tradition that the DoD Competitive Strategies Initiative was attempting to advance and institutionalize when it was announced in 1986.

During his long tenure as Director of Net Assessment in OSD, Marshall approached several defense secretaries with ideas for improving the way the department performed its strategic planning function. Over the years, a number of modest initiatives were undertaken toward this end. But it was for Caspar Weinberger, in 1986, to decide that the time had come to inaugurate a formal program for enhancing long-range strategic planning in the DoD with a principal focus on the long-term competition with the Soviet Union. He did this largely on the counsel of his special advisor, Dr. Graham Allison, Dean of the John F. Kennedy School of Government at Harvard University, Andrew Marshall's colleague years earlier at RAND.

## 1.2 COMPETITIVE STRATEGIES CONCEPT AND METHODOLOGY

As practiced in the Department of Defense, competitive strategies is both a process and a product. As a process, it is a method of systematic strategic thinking that allows for developing and evaluating United States defense strategy in terms of the long-term military competition with the Soviet Union. As a product, it is a plan of action or simply a guide for helping the U.S. gain and maintain a long-term advantage in the competition with the Soviets.[6]

Four key assumptions underpinned the competitive strategies concept as it was executed in the DoD:[7]

- The U.S. and the Soviet Union are involved in a long-term competition.

- The military is only one component of this competition, but one that has a significant impact in time of peace, crisis, and conflict.

- Defense resources are constrained on both sides.

- The Soviets use competitive strategies thinking; others could.

The central idea behind competitive strategies was to employ a three-step (three was considered the minimum), chess match-like methodology in aligning enduring U.S. strengths against enduring Soviet weaknesses in a move/response/counter-response sequence in order to create a new or improved military capability in high leverage areas and thereby gain significant military advantages. All of this was to be done in the context of a planning horizon beginning five years out (i.e., the last year of the DoD program) and extending fifteen to twenty or more years into the future. An outline of the proposed competitive strategies analysis methodology, in stylized, simplified form, was included as an attachment to a May 19, 1987 memorandum from Secretary Weinberger to the Competitive Strategies Council that elaborated on key aspects of the competitive strategies concept.[8]

From a political-military perspective, the principal objective of competitive strategies was, through systematic, long-range, strategic competition planning, to make the U.S. approach to the competition with the Soviets more efficient and effective so as to enhance deterrence and the security of the United States and its friends and allies. It sought to channel the competition into more stable and less threatening areas (e.g., force the Soviets to concentrate more on defending, at the expense of improving their offensive capabilities) or into areas where the Soviets functioned relatively ineffectively.[9]

What did these terms and concepts mean? The notion of "enduring" strengths and weaknesses envisioned adopting a planning horizon fifteen to twenty years or more beyond the current DoD program. A "new or improved military capability" involved a combination of one or more of the following:[10]

- Policies and plans

- Strategy, whether deterrent, force development and/or force

employment

- Doctrine, operational concepts, and tactics
- Forces and organizational concepts
- Training
- Military systems
- Technology

Very importantly, it was not considered sufficient to focus exclusively on weapons systems or technologies.[11]

Developing "leverage" in the competition involved pursuing one or more of the following goals:[12]

- Influence the opponent to divert resources to less threatening forces or doctrine.
- Encourage him to preserve forces that can be defeated easily.
- Obsolesce existing enemy capabilities (i.e., impose costs).
- Establish areas of enduring military competence (i.e., shape the competition).
- Present unanticipated military capabilities with significant impacts on the competitor (i.e., take the initiative and shift the focus of the competition).
- Make the opponent uncertain about the effectiveness of a major component of his military capability (e.g., doctrine, plans, equipment, etc.), or otherwise undermine confidence in the expected outcome of his plans and programs.

Long Shadows may obsolesce enemy capabilities without investing in production or deployment

Competitive strategies planning and analysis relied on the following

conceptual guidelines, as well:

- Competitive strategies requires identifying a specific opponent.
- The best opponent is one that is reasonably rational and thus reasonably predictable.
- The most effective competitive strategy takes advantage of the opponent's enduring predispositions. The goal is to stimulate the opponent to respond in ways compatible with his basic values, interests, and objectives. To do otherwise is to work counter to human nature and thus to limit the predictability of his response.
- Exploit the time dimension.

The time dimension was viewed as a critical element in the competition planning process.[13]

- All advantages are only temporary.
- How "temporary" depends on the advantage sought and the opponent's ability and willingness to react.
- Time can be made a part of strategy by:
  - Diverting the opponent as a means of buying time.
  - Releasing information when it is most inconvenient for the opponent to respond.
  - Timing multiple actions so the opponent cannot fully respond to one before another happens.
  - Trying to predict how long it will take the opponent to respond in order to plan your next move.
- Implications of using time as a tool included the following:

- It places a premium on surprise.

- It increases the importance of timely intelligence.

In planning and managing the competition, policymakers had four broad approaches to consider, depending upon circumstances:

- Sometimes the U.S. leads and needs to invest to keep the lead.
- Sometimes neither side has an advantage, but the U.S. must hold its own.
- Sometimes the U.S. has to cope with an opponent's comparative advantage and decide how to compete from weakness.
- Sometimes the U.S. will not compete.

These basic but important ideas, and others that emerged as experience was gained, provided an essential basis in theory for understanding and conducting competitive strategies planning and analysis as it was undertaken by the DoD in 1986.

With Secretary Weinberger's 1986 announcement of the formal establishment of the DoD Competitive Strategies Initiative, many questions and concerns arose within and beyond the Pentagon, even as to the need to have such a program, particularly one managed by OSD. It was said that competitive thinking was already a well established tradition in the DoD, particularly in the military departments. In response to a formal OSD request for information on programs supportive of competitive strategies, a senior official from one of the military Services replied in writing that their "current Program Objective Memorandum (POM)" was, in fact, "a competitive strategy."

The early contributions of Andrew Marshall to the theoretical and practical understanding of competitive strategies aside, a case can be made that competitive strategies was neither revolutionary (as some were suggesting) nor even new. The reason was that senior members of the DoD and their closest advisors had pursued this kind of thinking over the years in several areas, even though they were not characterized as competitive

strategies. For example, Secretary Weinberger's *Defense Guidance* documents for 1981 and 1982, the first two years of the Reagan administration, made reference to "competing with the Soviet Union in peacetime."[14] The idea of imposing costs on the Soviets, along with other goals that were to be pursued through competitive strategies, were stressed. In his *Annual Report to the Congress, Fiscal Year 1987* and *Fiscal Year 1988*, Secretary Weinberger cited several historical examples of what were judged to be successful competitive strategies. The ability of U.S. bombers to penetrate Soviet air space, and U.S. anti-submarine warfare (ASW) programs, featured prominently among the cases discussed.[15]

As a basic concept in strategic planning, then, competitive strategies was not new; indeed, in an early concept paper, Secretary Weinberger noted that "the competitive strategy initiative is less 'new' than 'true'."[16] Andrew Marshall himself made clear that the notion of competitive strategies, in and of itself, was not new.[17] Recalling several past instances where the competitive strategies approach had been adopted, at least implicitly -- and in some cases explicitly -- he once observed:

> The point is that a number of these people applied the idea [of] shaping the Soviet expenditure of resources, and made judgment calls as to the leverage our expenditure and/or actions could have in increasing Soviet expenditures of resources in areas that, all things considered, was [*sic*] preferred to other uses the Soviets might put those resources to. What characterized all of the cases that I know of was that little staff work was done, little detailed analysis, rather it seemed almost self-evident to these people that there were significant and interesting payoffs to particular actions. Some rough estimates of cost exchange (without attention to time phasing) were perhaps made and other possible benefits listed, and their benefits to us judged.[18]

What was new about competitive strategies as it began to be practiced in the DoD in 1986 was Secretary Weinberger's decision to institutionalize the process at his specific direction by involving people at many levels and attempting to develop and implement competitive strategies in a much more explicit, systematic, deliberate, and thus more effective, way than had been the case before. It was hoped that this might lead ultimately to a fundamental change for the better in how the department thought about and

developed the military component of U.S. national security strategy; structured its research, development, and acquisition programs; and, more generally, arrived at key decisions as part of the DoD Planning, Programming, and Budgeting System (PPBS).

Secretary of Defense Frank Carlucci's *Annual Report to the Congress, Fiscal Year 1989* included the following comments about the value of competitive strategies:

> By establishing this way of thinking within our planning processes, I expect that we will be better able to identify and focus on the most effective use of our resources. In this sense, Competitive Strategies contributes to the nation's fiscal health as well as to our strategic thinking. It offers a sensible approach to preserving or improving our military capabilities as resources become more scarce.[19]

The following year, in his *Annual Report to the Congress, Fiscal Year 1990*, Secretary Carlucci conveyed an even more expansive view of the advantages to be gained from pursuing competitive strategies:

> Competitive Strategies offers a useful approach for assisting the Department (and, potentially, our allies) in developing defense policy, planning military forces, allocating defense resources, developing cooperative programs, assessing arms control proposals, and managing collective security matters. We will continue to apply the CS methodology across the spectrum of conflict to assist in identifying the most effective ways to employ our scarce defense resources. In this sense, CS may contribute to fiscal prudence as well as to the evolution of our strategic doctrine.[20]

The Office of the Secretary of Defense was careful to point out that competitive strategies was not a substitute for comprehensive U.S. and allied defense planning, the DoD PPBS, or the Joint Chiefs of Staff's Joint Strategic Planning System (JSPS).[21] Rather, competitive strategies was best viewed as a logical, even critical, complement to these more traditional defense planning and management activities. This notion of complementarity suggests that competitive strategies has something to contribute to the existing DoD strategic planning system because it is somehow different from the

existing system, dominated as it is by the PPBS and the JSPS. What are these differences?[22]

First, the PPBS and JSPS typically focus on the near term, looking out six years, with but largely perfunctory attention given to periods further out. Competition planning, on the other hand, must consider both the near term and the far term, over two decades or more. Second, the PPBS and JSPS generally are structured to support consideration of specific programmatic or operational decisions. Competition planning is more holistic, oriented on formulating overall goals and strategies which, if adopted, would help provide the essential context for PPBS and JSPS type planning.

Next, whereas change is a key element in both the PPBS and JSPS, the changes made typically are reactive in nature. Change is, by and large, a response to shifts in the level of funding, variations in developmental progress, modifications in the availability of forces, or perceptions of weakness in relation to military requirements based, at least in part, on the evolution of the threat. In this sense, extensive effort is expended in the PPBS and JSPS in reducing U.S. weaknesses (a necessary but hardly sufficient focus for high-level defense planning), vice exploiting enduring U.S. strengths and enduring enemy weaknesses, the very essence of competitive strategies.

Fourth, whereas addressal of the future security environment in the PPBS and JSPS is often stylized and episodic, competition planning is based on a strong, systematic focus on the competitive context of U.S. national strategy. This competitive focus considers the views and likely actions of the Soviet Union, other competitors, and third parties, including allies, and a range of alternative future security environments. Moreover, it calls for a robust element of adaptivity explicitly designed into plans so as to take account of likely future actions of competitors and third players.

Finally, whereas the PPBS and JSPS necessarily must be concerned with the totality of the military aspect of U.S. national security strategy and with the totality of the supporting defense program, competitive strategies is far more selective in approach. In Andrew Marshall's view, "It is necessarily selective and only the most promising candidate areas are likely to be canvassed and be developed in detail as possible competitive

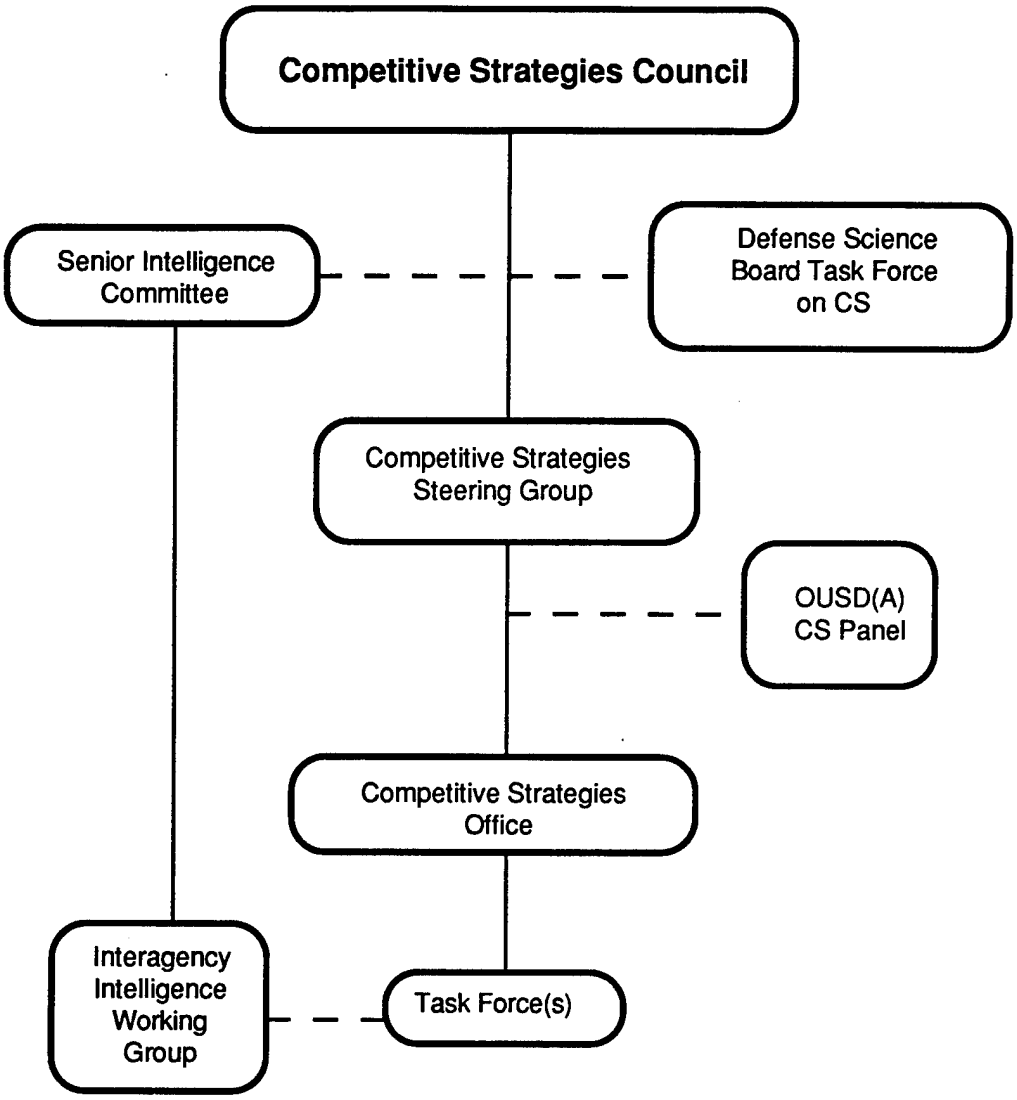
strategies."[23]

Ideally, an overall DoD plan for the long-term competition should consist of a carefully conceived, well balanced amalgam of programs and actions selected for the promise they hold for gaining a position of strategic leverage over the opponent. As with the manager of an investment portfolio, the Secretary of Defense must be able to adapt to changes in the environment and hedge uncertainty. This adaptivity requires the flexibility to adjust the composition of the DoD's portfolio of competitive strategies when circumstances warrant. Marshall's words on this point are instructive:

> Examining the entire sequence of moves and countermoves can help us manage the direction, scope, and pace of our research, acquisition, and operational planning efforts as well as help us evaluate whether or not we are better off militarily as a result of that sequence of events. We recognize that there will be a great deal of uncertainty surrounding Soviet responses. *We must, as a result, hedge against these uncertainties by developing robust options from which we can select the appropriate ones at the appropriate times* [italics added] as Soviet responses become clearer.[24]

## 1.3 ORGANIZATION AND MANAGEMENT

Establishing a major new function in a large bureaucracy is never easy. Given the potential complexity and sensitivity of the competitive strategies function in the DoD, careful thought was given to how to structure it organizationally and then manage it on a day-to-day basis. Over a period of several months, Andrew Marshall, Dr. Graham Allison, and others explored many different possible approaches before deciding on the one finally recommended to Secretary Weinberger. On May 7, 1987, the Secretary sent his management plan for institutionalizing competitive strategies to the DoD's senior civilian and military leadership.[25] The approach actually adopted departed only slightly from the original recommended plan. Figure 1 reflects the organization of the DoD Competitive Strategies Initiative as it had evolved and generally stabilized by the spring of 1988.[26]




Source: Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

**Figure 1. Competitive Strategies Organization**

The importance of the competitive strategies organizational structure as it was initially adopted and then evolved was that it:

- Clearly demonstrated the Secretary of Defense's support for competitive strategies.

- Provided explicit focus for department-level competition planning and analysis.

- Was directly managed from within the immediate Office of the Secretary of Defense, and so was immediately responsive to the desires of the Secretary and Deputy Secretary.

- Facilitated the flow of innovative ideas directly to the department's highest levels without having to negotiate a multiplicity of intervening layers of bureaucracy.

- Provided for involvement of all major elements of DoD, both civilian and military.

- Complemented the DoD PPBS and the Joint Chiefs of Staffs' JSPS.

As events unfolded, people at many levels, including the Secretary and Deputy Secretary of Defense, other senior OSD officials, the chairman of the JCS, the civilian and military heads of the Services, the commanders-in-chief (CINCs) of the unified and specified commands, the leadership of the intelligence community, and many others down to the action officer level became actively involved in the DoD Competitive Strategies Initiative. Extensive consultations also took place with other offices and departments in the executive branch, the Congress, European and NATO parliamentarians and military officials, and representatives of U.S. business, industry, and academe.

Referring to Figure 1, the institutionalization process began with the formation of the Competitive Strategies Council. Chaired by the Secretary of Defense, the council's purpose was to provide guidance, approve candidate competitive strategies, and set priorities for implementation. The members of the council included:

- Secretary of Defense, chairman
- Deputy Secretary of Defense
- Secretaries of the military departments
- Chairman of the Joint Chiefs of Staff
- Under secretaries of defense
- Service chiefs

- Assistant Secretary of Defense, Program, Analysis, and Evaluation
- Director, National Security Agency
- Director, Defense Intelligence Agency
- Chairman, Competitive Strategies Steering Group

The council held a total of six meetings, between May 21, 1987 and September 15, 1988.

A Competitive Strategies Steering Group was established subordinate to the CS Council. Initially, the steering group was co-chaired by Dr. Graham Allison, Special Advisor to the Secretary of Defense, and Dennis Kloske, Special Advisor to the Deputy Secretary of Defense, who also was serving as Deputy Under Secretary for Planning and Resources. With the departure of Secretary Weinberger and Dr. Allison, Dennis Kloske became the chairman. The steering group's functions included identifying candidate competitive strategies areas, designating personnel to serve on the analytic task forces, orchestrating the efforts of those task forces, and making recommendations to the council. The membership of the steering group evolved over time. By the spring of 1988 it included:

- Special Advisor to the Deputy Secretary of Defense, chairman
- Assistant Secretary of Defense for International Security Policy (ISP)
- Assistant Secretary of Defense for International Security Affairs (ISA)
- Director of Net Assessment, OSD
- Representatives of:
  - Under Secretary of Defense for Acquisition
  - Service secretaries
  - Chairman, JCS
  - Service chiefs
  - Assistant Secretary of Defense, Program Analysis and Evaluation
  - Director, Defense Intelligence Agency

For reasons never fully explained, although it was questioned on several occasions, a representative of the Office of the Assistant Secretary of the Air Force for Acquisition sat as a *de facto* member of the steering group.

To serve as a focal point and facilitate the day-to-day management of the competitive strategies process, the Competitive Strategies Office (CSO), headed by a colonel (O6), was established within the OSD secretariat on June 5, 1987. Three other officers (O5/O6 level), one from each of the military departments, were assigned to staff the CSO. One civilian administrative assistant was provided to support the professional staff. All of the military and civilian personnel billets were only temporary. The CSO served as the executive secretariat for both the Competitive Strategies Council and the CS Steering Group.

Intelligence had a major role to play in competitive strategies. To ensure comprehensive and timely support by the major intelligence agencies, the Secretary of Defense, on June 15, 1987, established the Competitive Strategies Senior Intelligence Committee (SIC). Its membership included:

- Director, Defense Intelligence Agency, chairman
- Director, National Security Agency
- Service intelligence chiefs
- Director, Intelligence Community Staff
- Deputy Director for Intelligence, Central Intelligence Agency

An interagency intelligence working group, subordinate to the SIC, was formed to assist the work of the steering group and the analytic task forces.

In order to provide essential support to competitive strategies from a systems and technologies perspective, the Under Secretary of Defense for Acquisition (USD(A)) established the Competitive Strategies Acquisition Panel. In the short term, this panel was to assist the immediate work of the analytic task forces and exploit the results of their efforts. In the longer term, it was intended to manage the DoD's overall acquisition support for the entire initiative. To assist in this effort, the USD(A) chartered a task force within the Defense Science Board (DSB). Made up of distinguished representatives from the private sector, the DSB Task Force on Competitive Strategies would provide an independent perspective on the research, development, and acquisition implications of competitive strategies.

The DoD management plan of May 7, 1987 called for ad hoc, interagency (the term came to mean intra-departmental) task forces to be formed to accomplish specific competitive strategies analytic assignments. These task forces would be convened at the call of the council to work full time for not more than 90 days, and be organized based on the task assigned. DoD offices, agencies, the military departments, and the Services would provide personnel designated by the steering group to serve on the task forces and lend office space and administrative support as required.[27] Two intra-departmental task forces, each chaired by colonels assigned to the Strategy, Plans, and Policy (J-5) Directorate of the Joint Staff, were impaneled in succession between July 1987 and December 1988. They comprised fifteen and nine members, respectively,

Task Force I was directed by the council to examine the area of mid- to high-intensity global conventional conflict with the Soviet Union and its Warsaw Pact allies centered in Europe. It convened on July 20, 1987 and submitted its report to the steering group three months later, on October 20.[28] Task Force II was charged with investigating U.S. non-nuclear strategic capabilities. It commenced work on July 11, 1988 and briefed its final results to the steering group on November 29, 1988.[29] Plans were made to seat a third task force beginning in the summer of 1989, but this was deferred pending the completion of a program of supporting analysis aimed at exploring further the results of the work of Task Forces I and II. This activity was still ongoing when George Bush became President in January 1989 and Richard Cheney eventually was named defense secretary.

Eight criteria were used by the Competitive Strategies Office in screening topics for recommendation for study by the task forces. The criteria were as follows:[30]

- U.S.-Soviet Competition. The topic must relate directly to the U.S.-Soviet military competition (i.e., competition between the two superpowers pursued through surrogates was not to be considered). This criterion later was modified to permit consideration of indirect competition.

- U.S. Strength(s) and Soviet Weaknesses. It had to be demonstrated at the outset, at least as a first approximation, that there was an identifiable enduring Soviet weakness capable of being exploited (i.e., transformed

into a true vulnerability) by an enduring U.S. strength.

- Relevant. The topical area selected must offer the prospect of giving rise to a strategy that will have a significant impact on how the Soviets view the correlation-of-forces, either regionally or with respect to the U.S.-Soviet competition as a whole.

- Doable. The task force must be able to accomplish its planning mission in the time allotted (90 days); the task must be manageable, both substantively and bureaucratically; and it should not be something whose results are likely to be quickly overcome by events (e.g., should not pursue areas pertaining to arms negotiations about to be concluded).

- DoD Primacy. The DoD must be the principal actor in developing and implementing competitive strategies relating to the topic.

- Warfighting. The topic must deal only with the military aspects of warfighting (e.g., low intensity conflict has many non-military dimensions; competitive strategies would focus on the military).

- Fungible. The task must be such that the outcome, or at least portions of it, will be relevant to more than one region, military mission, or conflict contingency, or have implications for altering Soviet missions or priorities.

- Joint. The topic must allow for the consideration of joint involvement of the military Services and insure that each Service has a substantial interest in the outcome of the work of the task force.

A reorganization of the Office of the Secretary of Defense at the beginning of the Bush administration resulted in the Competitive Strategies Office being moved out of the secretariat and into the Office of the Under Secretary of Defense for Policy. Henceforth, the director of the CSO would report to the Principal Deputy Under Secretary for Strategy and Resources. Organizationally, the CSO is now located five levels below that of the Secretary.

In comparison with the level and intensity of work that went on during the Reagan administration, for all practical purposes the DoD Competitive Strategies Initiative

essentially has been discontinued. In 1989, members of the Competitive Strategies Office began to depart the organization as part of the normal military rotation process. With one exception, they were not replaced. Although several efforts have been made to obtain permanent billets and restaff the office, for most of the last year it has consisted of one military officer and no organic administrative support. The last meeting of the Competitive Strategies Council was held over two years ago, on September 15, 1988. The last CS Steering Group meeting occurred six weeks later, on November 28, 1988. As will be discussed in Chapter 2, various competitive strategies-related supporting analytic efforts continued into early 1990. As a practical matter, however, and without regard to their conclusions or quality, they were of little or no consequence.

Secretary Cheney has indicated that he wants to move forward with competitive strategies, but in ways that make sense in relation to the new and emerging strategic realities. With this in mind, a Competitive Strategies Senior Review Group was formed by the Under Secretary of Defense for Policy in July 1990 to identify ways of adapting the original competitive strategies concept and make recommendations to the Secretary on how to proceed. The group continues to meet as this report goes to press.

## ENDNOTES TO CHAPTER 1

1. Caspar W. Weinberger, *Annual Report to the Congress, Fiscal Year 1986* (Washington, D.C.: U.S. Government Printing Office, February 5, 1986), p. 87.

2. Caspar W. Weinberger, "U.S. Defense Strategy," *Foreign Affairs*, Spring 1986, p. 694.

3. Caspar W. Weinberger, "Implementing Competitive Strategies," memorandum dated August 12, 1986. (S)

4. Caspar W. Weinberger, "Institutionalizing Competitive Strategy," memorandum dated January 9, 1987. (S)

5. Marshall, A. W., *Long-Term Competition with the Soviets: A Framework for Analysis (U)* (Santa Monica: RAND Corporation report R-862-PR, April 1972). (C)

6. Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Primer," April 1989, p. 4. Many of the early ideas on competitive strategies originally conveyed by the Secretary of Defense to the senior DoD leadership in classified correspondence were soon declassified and included in the "primer," the "Competitive Strategies Briefing" (see note 7, below), various editions of the *Annual Report to the Congress*, and other products used to disseminate unclassified information to the public on the DoD Competitive Strategies Initiative.

7. Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated). This briefing was created by the members of the DoD Competitive Strategies Office, shortly after the founding of that organization in June 1987. Thereafter, it was maintained as a "living document," which is to say it was revised frequently (sometimes daily). At any given time, the briefing both reflected the current state of thinking on competitive strategies in the DoD and served as an up-to-date status report on the DoD Competitive Strategies Initiative, readily available for presentation to appropriate audiences. It included material from many different sources (most of which quickly lost their original identity), dating back to Andrew Marshall's early work published in 1972 (see note 5, above). Various of the ideas on the competitive strategies concept and methodology discussed in the present report that were extracted from the "Competitive Strategies Briefing" were addressed in a presentation, entitled "Competitive Strategies and Arms Control," by James G.

Roche to the American Defense Preparedness Association Aerospace Conference on Competitive Strategies, Los Angeles, CA, February 17, 1988.

8. Caspar W. Weinberger, "The Competitive Strategies Concept," memorandum dated May 19, 1987. (S)

9. "Competitive Strategies Primer," op. cit., p. 4.

10. "Competitive Strategies Briefing," op. cit.

11. "The Competitive Strategies Concept," op. cit., p. 1; "Competitive Strategies Briefing," op. cit.

12. "Competitive Strategies Briefing," op. cit.

13. Ibid.

14. Department of Defense, *Defense Guidance, Fiscal Year 1981* and *1982*. (S)

15. *Annual Report to the Congress for Fiscal Year 1987*, op. cit., p. 86; and *1988*, op. cit., pp. 66-67.

16. "The Competitive Strategies Concept," op. cit., p. 1.

17. Andrew W. Marshall, "Competitive Strategies - History and Background," paper presented at American Defense Preparedness Association Aerospace Conference on Competitive Strategies, Los Angeles, CA, February 17, 1988, p. 4.

18. Ibid., p. 5.

19. Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1989* (Washington, D.C.: U.S. Government Printing Office, February 11, 1988), p. 115.

20. Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1990* (Washington, D.C.: U.S. Government Printing Office, January 17, 1989), p. 48.

21. "Competitive Strategies Primer," op. cit., p. 7.

22. J. J. Martin, et al., *The U.S.-Soviet Long-Term Military Competition*, final report prepared for Director, Defense Nuclear Agency and Director, Net Assessment, Office of the Secretary of Defense (San Diego, CA: Science Applications International Corporation, June 5, 1990), Volume II, "Planning and Analysis," p. 56.

23. "Competitive Strategies - History and Background," op. cit., p. 4.

24. Andrew W. Marshall, "The Competitive Strategy Concept," draft memorandum (undated).

25. Caspar W. Weinberger, "Management Plan for Institutionalizing Competitive Strategies," memorandum dated May 7, 1987. (C); see also Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1989*, op. cit., pp. 115-116.

26. *Annual Report to the Congress, Fiscal Year 1989*, op. cit., pp. 115-116; "Competitive Strategies Briefing," op. cit.

27. "Management Plan for Institutionalizing Competitive Strategies," op. cit., p. 2.

28. "Competitive Strategies Task Force Final Report on Mid- to High-Intensity Global Conventional War," Office of the Secretary of Defense, Washington, D.C., November 1987. (S/NF)

29. "Task Force II Report on Non-Nuclear Strategic Capabilities," Office of the Secretary of Defense, Washington, D.C., December 23, 1988. (S/NF)

30. Competitive Strategies Office, Office of the Secretary of Defense, "Criteria for Selecting Next Task Force Topic," working paper (undated).

# 2. THE COMPETITIVE STRATEGIES DEVELOPMENT PROCESS AND SUPPORTING PROGRAM OF ANALYSIS

This chapter outlines chronologically the overall process adopted and the analyses conducted, including the key conclusions rendered, in support of the DoD Competitive Strategies Initiative between 1986 and 1990. A more complete review and analysis of the methodological aspects of selected major phases of this work is provided in Chapter 4.

As discussed in Chapter 1, Secretary of Defense Caspar Weinberger presented his initial plan for institutionalizing competitive strategies in the DoD on January 9, 1987.[1] Then, on May 7, 1987, in a memorandum to the DoD's senior civilian and military leadership entitled, "Management Plan for Institutionalizing Competitive Strategies," he established the department's organization for competitive strategies, including the Competitive Strategies Council, CS Steering group, and task forces.[2] This memo also tasked the Under Secretary of Defense for Acquisition (USD(A)), in consultation with the chairman of the Joint Chiefs of Staff, to develop lists of "Top 10 Technologies" and "Top 10 Systems" that offered "significant competitive advantages."

The memo further directed the JCS chairman, in consultation with the Joint Chiefs of Staff and with the support of the commanders-in-chief (CINCs) of the combatant commands, to develop a list of those operational and strategic tasks the U.S. armed forces must accomplish in order to achieve stated national security objectives. These were termed "Key Mission Areas" (KMA). Finally, the Under Secretary of Defense for Policy was instructed to incorporate competitive strategies into the *Defense Guidance* and ensure that various defense-related policies were attuned to the adopted strategies.

The Competitive Strategies Council met for the first time on May 21, 1987 under the chairmanship of Secretary Weinberger. During this meeting, the Secretary explained the concept of competitive strategies, and the attendees described how their respective organizations could contribute. Thus was inaugurated the DoD Competitive Strategies Initiative.[3]

## 2.1 "TOP 10" LISTS OF TECHNOLOGIES AND SYSTEMS

It was intended that, once approved by the council, the lists of Top 10 Technologies and Systems, directed by Secretary Weinberger to be developed by the USD(A), would be provided to the competitive strategies task forces for their use and be retained on file for planning purposes throughout the department. The Secretary also noted that he and the Deputy Secretary would consider the technologies and systems identified in the approved competitive strategies as high priority items as they reviewed the "hard choices before the Defense Resources Board."[4] Thus, very early-on, a direct link was established between competitive strategies and the resource allocation process in the DoD. As will be discussed, this was soon to prove problematic. After several months of thoughtful work involving a special assistant to the USD(A), the Acquisition under secretaries, and other senior managers in Acquisition, the lists of Top 10 Technologies and Systems were sent to the chairman of the Competitive Strategies Steering Group on June 12, 1987.[5]

For a number of bureaucratic and substantive procedural reasons, the lists were not particularly useful in helping guide the competitive strategies process. For example, because of potential implications for resource allocation, there was continuing tension within the Pentagon regarding what should (and should not) be on the lists. It also was felt that, whereas a particular competitive strategies task force might wish to use the lists to inform its deliberations, it should not be bound, or otherwise constrained, by the lists.

Finally, the task forces tended, in developing their recommended strategies, to be influenced more by the strategic, operational, and even tactical goals they were trying to achieve (all of which, at least theoretically, could be attained through a variety of means), than by any attempt to exploit a particular technology or system. This was true even for Task Force II, who had been directed by the council to concentrate on a particular class of solutions, namely, non-nuclear strategic capabilities. Indeed, at times, this task force seemed to be strongly averse even to considering what some observers viewed as "obvious" hardware and technology solutions.

## 2.2 KEY MISSION AREAS (KMA) LIST

The list of KMAs, once approved by the council, was expected to provide the steering group with a framework for forming specific competitive strategies task forces. The chairman of the JCS, in conjunction with the CINCs, was directed to incorporate the operational concepts portion of the adopted strategies in its planning activities.

On June 11, 1987, the Joint Staff provided to the members of the steering group its first draft of what it called "Key Military Activities."[6] The final draft was not forthcoming until October 1988, sixteen months later.[7] Although still only a draft, it contained numerous caveats. Developing the list had proven to be a much more daunting task than many had imagined. In the event, the obstacles to progress appeared to be less analytic than having to do with traditional tensions among the Services over roles and missions. As in the case of the "Top 10" lists, the catalog of key mission areas was of little consequence in helping guide the competitive strategies process. The list of KMAs was considered neither by the steering group nor by the council when topics for the task forces were explored and selected. For their part, the task forces focused their work at least one level below that of the KMAs.

an example of a process with higher priority tasks.

## 2.3 TASK FORCE I

At its second meeting, on July 8, 1987, the Competitive Strategies Council chartered the first competitive strategies task force. Task Force I was directed to examine the area of mid- to high-intensity global conventional conflict centered in Europe. They were asked to identify key leverage points whose exploitation would force a major Soviet reassessment of the Warsaw Pact's ability to conduct offensive operations against the U.S. and its NATO allies in the European Center Region. Having done this, the task force was to develop candidate competitive strategies to exploit the identified leverage points.[8]

This particular topic was selected because of: (1) the strategic importance of Europe to the United States, (2) the large portion of the U.S. defense budget devoted to the defense of Europe, (3) the emerging prospects for major arms reductions, and (4) the fact

that there was likely to be ample data to support this, the first task force, which would be conducting what amounted to a validation run-through of the competitive strategies concept and methodology.[9]

The Senior Intelligence Committee, at their first meeting in early July 1987, was asked by the chairman of the Competitive Strategies Steering Group to assist Task Force I by providing a list of weaknesses in the Warsaw Pact's ability to execute its theater strategic conventional offensive operation in Europe. At this meeting, one of the intelligence chiefs remarked that, as far as he knew, this was the first time that all of the heads of the key defense intelligence-related activities had met as a group to discuss a major U.S. national security issue. Without regard to the accuracy of this (at the time) startling comment, it is true that there was little precedent for this gathering. The SIC directed the conduct of a thorough all-source intelligence analysis and submitted their final report later that same month.[10] The actual work was personally managed by one of the most senior executives in the Defense Intelligence Agency and involved direct contributions by some of the intelligence community's most senior managers and foremost Soviet experts.

Task Force I commenced work on July 20 and published their final report the following November.[11] Beginning with a list of over 100 assessed vulnerabilities that could impact the accomplishment of the Soviet-led Warsaw Pact's theater strategic offensive operation, the task force identified 38 "potential leverage points." Only 19 of these, however, were of direct military interest to the DoD. Following further winnowing and combining, Task Force I's study resulted in four proposed initiatives:[12]

- Countering Soviet Air Operations. The task force recommended that NATO, led by the U.S., enhance its offensive capabilities against Soviet sortie generation by developing a phased attack, led by unmanned aircraft, on the Soviets' main operating bases and air infrastructure. From a defensive air perspective, the task force recommended measures to strengthen the integrity of NATO's air and ground operations.

- Countering Soviet Penetration of NATO Forward Defenses. The task force recommended developing an asymmetric force capability comprised of an integrated network of long-range, mobile weapons platforms, and target acquisition and command and control assets

capable of engaging Soviet mobile targets beyond the range of Soviet artillery and multiple-launch rocket systems.

- Stressing the Warsaw Pact Troop Control System. The task force recommended frustrating Soviet tactical operations by blocking preplanned options. This would force their communications to the operational level where a preplanning capability existed. By use of direct attack, special operations, and deception, NATO could counter the Pact's ability to devise and execute operational responses.

- Countering Soviet Global and Multi-Theater Operations. Finally, to exploit the Soviet aversion to a protracted multi-theater conflict, the task force recommended developing an offensive warfighting capability for conducting large-scale joint and combined conventional offensive military campaigns.

Collectively, the four candidate competitive strategies involved a combination of new doctrinal and organizational approaches, innovative theater strategies and operational concepts, and existing systems and emerging technologies.

The potential implications for strategy, doctrine, and concepts included:[13]

- Conservation of manned aircraft and armor.

- Long-range, mobile targeting.

- Counter-offensive thinking.

- Improved and integrated C3I and counter-C3I.

The proposed strategies were intended to exploit enduring U.S. and NATO strengths in several areas:[14]

- Sensors; reconnaissance, surveillance, and target acquisition; intelligence fusion; and data automation, processing, and dissemination.

- Unmanned systems, including remotely-piloted vehicles (RPV), surface-to-surface missiles (SSM), multiple-launch rocket systems

(MLRS), and extended range systems such as the Army Tactical Missile System (ATACMS).

- Standoff weapons with smart submunitions.
- Stealth technology.

Synergy was expected to be gained through the joint and combined implementation of the concepts.

A careful screening of Task Force I's final report led to the development of a list of potentially high-leverage capabilities (Table 1).

**Table 1. High-Leverage Capabilities: Competitive Strategies Task Force I**

| | |
|---|---|
| Unmanned/Manned Aerial Vehicles | Rapidly Emplaceable Mines |
| Mobility | Counter-control |
| Standoff | Conservation of Key Assets |
| Long-Range | Low-Observables |
| Precision Guidance | Decoys |
| Sensors | Deception |
| Miniaturization | Area Munitions |
| Intelligence Fusion | Survivable $C^3$ I |
| Smart Munitions | Fuel-Air Explosives |
| Microcircuitry | Penetrator Warheads |
| | Saturation |

**"Systems of Systems"**

Source: Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

Following still further analysis, an "application framework" was created that related the four strategies recommended by Task Force I to five major families of systems and associated technologies (Figure 2).

| Proposed Competitive Strategies | Families of Systems and Technologies | | | | |
|---|---|---|---|---|---|
| | Surface-Surface Missiles | Cruise Missiles & RPVs | Air-Surface Missiles | Multiple-Launch Rockets | $C^3I$ |
| Counter-Air | Suppress air sorties & air defenses | Suppress air sorties & air defenses | Kill main operating bases & other hard targets | Tactical air defense suppression | |
| Counter-Penetration | Mass fires from long range | Key recon element for concept | Major stand-off system for concept | Key to barrrier delivery; sets up kill | |
| Counter-Countrol | Emplace barriers<br>Destroy bunkers | Attack emitters (anti-radiation) | Destroy hardened bunkers | Key to barrrier delivery<br>Disrupt plans<br>Force comms | |
| Global, Multi-Theater | Power Projection on the Flanks | | | | |

Source: Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

**Figure 2. Application Framework: Competitive Strategies Task Force I**

In large measure, Task Force I was advocating the expedited development of what the Soviets termed a "reconnaissance-strike complex." The work of the task force also highlighted the fact that competitive strategies, in and of itself, could not be expected to ensure victory in a war in Europe; the Atlantic Alliance needed to continue to reduce its own weaknesses and vulnerabilities. For all its merits, competitive strategies was no substitute

for sticking to the basics.

The results of work of Task Force I were briefed to the Competitive Strategies Council on October 30, 1987. At this meeting, it was decided to initiate a review of the task force's final written report for basic feasibility. This was to be accomplished by all of the organizations represented on the council. The Joint Staff would collect input from the CINCs. The council asked that the Senior Intelligence Committee provide a separate assessment from a joint intelligence perspective.

By this time, competitive strategies had come to the attention of other executive branch offices, the Congress, and various European and NATO audiences. Outside of the DoD in the executive branch, meetings were held over the next year with members of the President's Foreign Intelligence Advisory Board (PFIAB); the staff of the office of (then) Vice President George Bush, the National Security Council, and the Office of Management and Budget; and officials of the State Department and Central Intelligence Agency. On January 15, 1988, responding to an amendment to the National Defense Authorization Act for FY 88 and 89 introduced by (then) Senator Dan Quayle (S. 1174), Secretary Carlucci submitted a special report on competitive strategies to Congress. This was followed by a year-long series of formal hearings and other meetings and briefings to members and staff in both the House and the Senate. Several trips were made to Europe, as well, to meet with senior American commanders and staffs and European and NATO parliamentarians, senior military officials, and members of their staffs who had expressed considerable interest in competitive strategies, in general, and the work of Task Force I, in particular. The chairman of the Competitive Strategies Steering Group normally represented the Secretary of Defense at these sessions.

## 2.4 DOD FEASIBILITY ASSESSMENT OF TASK FORCE I

The results of the Competitive Strategies Council-directed DoD feasibility assessment of the recommendations made by Task Force I were generally highly favorable. Table 2 shows the reaction of the individual council members.

The counter-air, counter-penetration, and counter-control strategies were

judged by all members of the council to be feasible. The Secretary of the Air Force ranked these strategies 1-3, respectively. The global, multi-theater strategy was assessed by the Secretary of the Army, the Secretary of the Air Force, and the Defense Intelligence Agency as being infeasible. In contrast, the Secretary of the Navy assigned the highest priority to this strategy.

**Table 2. Competitive Strategies Council Feasibility Assessment: Competitive Strategies Task Force I**

| Council Member | Counter-Air | Counter-Penetration | Counter-Control | Global, Multi-Theater |
|---|---|---|---|---|
| SECARMY | ↗ | ↗ | ↗ | ↘ |
| SECNAV | ↗ | ↗ | ↗ | ↗ 1 |
| SECAF | ↗ 1 | ↗ 2 | ↗ 3 | ↘ 4 |
| CJCS | ↗ | ↗ | ↗ | ↗ |
| USD(P) | ↗ | ↗ | ↗ | ↗ |
| USD(A) | ↗ | ↗ | ↗ | ↗ |
| DIA | ↗ | ↗ | ↗ | ↘ |
| NSA | ↗ | ↗ | ↗ | ↗ |

Source: Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

For their part, the commanders-in-chief were unanimous in the conclusion that all four recommended strategies were feasible (Table 3). Rank orderings of the proposed strategies generally reflected the interests of the individual CINCs. Although resource requirements were to be considered in a subsequent analysis, several of the CINCs expressed concern about the potential costs of the proposed strategies.

The key CINC, as it involved Task Force I, was USCINCEUR. Having reviewed and provided comments on the work of the task force, he and his staff then initiated an extensive study of the implications of competitive strategies for the military situation in the U.S. European Command (USEUCOM). The final report of this effort was released on June 19, 1989. It included a detailed competitive strategies action plan for USEUCOM.[15]

## 2.5 SENIOR INTELLIGENCE COMMITTEE REVIEW OF TASK FORCE I

As already noted, the Senior Intelligence Committee was directed by the council, on October 30, 1987, to review the work of Task Force I for feasibility. They were to place particular emphasis on the range of likely Soviet responses to the U.S./NATO initiatives proposed by the task force. The report of the SIC's comprehensive analysis, dated June 17, 1988, concluded that the selected Soviet vulnerabilities were essentially sound and that, if fully implemented, the task force's recommendations could enhance deterrence. A NATO commitment was, however, required for success.[16]

Among the four recommended strategies, only the global, multi-theater component was called into serious question. Of nine assumed Soviet vulnerabilities that this initiative was intended to exploit, the SIC concluded that three were invalid, five were conditional, and only one was valid. They noted that, whereas the proposed strategy did have promise, it would have to be applied selectively. On the whole, however, it was "not viable as proposed."[17] On two different occasions, both Secretary Carlucci and Deputy Secretary Taft expressed a number of substantive and analytic reservations concerning this particular proposed strategic initiative.

**Table 3. Commanders-in-Chief Feasibility Assessment: Competitive Strategies Task Force I**

| Council Member | Counter-Air | Counter-Penetration | Counter-Control | Global, Multi-Theater |
|---|---|---|---|---|
| CINCCENT | ↗ 3 | ↗ 2 | ↗ 4 | ↗ 1 |
| CINCEUR | ↗ 1 | ↗ 2 | ↗ 3 | ↗ 4 |
| CINCFOR | Global relates to AOR, but risk assessment and resource requirements needed | | | |
| CINCLANT | ↗ 4 | ↗ 3 | ↗ 2 | ↗ 1 |
| CINCMAC | ↗ 1 | ↗ 3 | ↗ 2 | ↗ 4 |
| CINCPAC | ↗ 3 | ↗ 4 | ↗ 2 | ↗ 1 |
| CINCSAC | ↗ 2 | ↗ 3 | ↗ 1 | ↗ 4 |
| CINCSO | ↗ | ↗ | ↗ | ↗ |
| CINCSOC | ↗ 4 | ↗ 3 | ↗ 2 | ↗ 1 |
| CINCSPACE | ↗ 3 | ↗ 4 | ↗ 2 | ↗ 1 |
| CINCTRANS | ↗ | ↗ | ↗ | ↗ |

Source: Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

## 2.6 LIST OF ENABLING SYSTEMS AND TECHNOLOGIES

With the onset of work by Task Force I, the USD(A) directed that a working group, subsequently named the Competitive Strategies Acquisition Panel, be set up under the chairmanship of the Director of Defense Research and Engineering (DDR&E) to support the Competitive Strategies Initiative. The panel's membership was drawn from OSD, the Joint Staff, the Services, and other defense agencies. It was decided that the panel's first product would be a list of systems that would provide the kind of capability required to execute the operational concepts envisioned by Task Force I. The initial plan called for each of the organizations represented on the panel to develop and submit its own list of enabling systems. These would then be reviewed and integrated into one overall list. When this approach failed to produce the needed results, the panel's executive secretary prepared his own integrated list, which he sent out for comment. Several months and numerous iterations later, on April 6, 1988, a final list highlighting thirty systems and ten technologies was sent to the Deputy Secretary of Defense.[18]

## 2.7 COMPETITIVE STRATEGIES JOINT WAR GAME COMMITTEE VALIDATION ASSESSMENT OF TASK FORCE I

The Competitive Strategies Council, at their February 19, 1988 meeting, expressed their satisfaction with the results to date of the ongoing feasibility review of the results of Task force I. Given what appeared to be a valuable concept for competition planning and a promising body of research and analysis already done under the aegis of competitive strategies, the council directed that a joint war game committee be formed to further assess the work of Task Force I from an operational perspective. The council requested that, over the next six months, the committee, working full-time, and with support, as required, from OSD, the Joint Staff, and the Services, accomplish the following:[19]

- Determine the operational validity of the candidate competitive strategies, both individually and in combination.

- Identify, for those proposals deemed valid, essential high leverage employment doctrines, concepts, organizations, systems, and technologies.

- Develop data to support an informed investigation of the resource implications of the desired military capabilities.

The War Game Committee met for the first time on March 14, 1988 with representation from the Joint Staff, the four military Services, and, because of the NATO focus of the task force's effort, USEUCOM. An Air Force colonel from the Joint Staff and a Navy captain from OSD served as committee co-chairs. The War Game Committee wanted the Joint Staff's Force Structure, Resource, and Assessment (J-8) Directorate to perform the required gaming and analysis work, but was told that, because of a full schedule of commitments, J-8 was unable to do it within the required six-month time limit.

The committee was then given approval to conduct and integrate the results of a series of computer-based combat models and political-military simulations planned for execution by three Washington-based defense consulting firms: BDM International, the Institute for Defense Analyses (IDA), and Booz-Allen and Hamilton. Two force-on-force simulation models were used by the committee: BDM's "Combat IV" and IDA's "TACWAR." Booz-Allen assisted the committee by organizing and conducting two political-military simulation exercises that included a strong "red team" component. Off-line investigations that drew heavily on the results of completed analyses were conducted, as well.

As a starting point for gaming and modeling the concepts proposed by Task Force I, the committee was given the list of enabling systems developed by the Competitive Strategies Acquisition Panel, discussed earlier. By this time, the list had grown from 30 to 39 entries. Special access ("black") programs (SAPs) had an obviously important role to play in competitive strategies and in the gaming being conducted in support of the work of Task Force I. However, because of concerns relating to the release of sensitive information, the Deputy Secretary of Defense and the USD(A) agreed that black systems would have to be dealt with separately. This decision required establishing some means of determining what the relevant systems were and then assessing them in relation to the findings of Task Force I.

Official access to information on black programs was sought by the War Game Committee immediately after they began work in March 1988. Delays in responding to this request by the Office of the Director of Special Programs in OUSD(A) led to a memorandum from the Secretary of Defense on October 28 directing "USD(A), in conjunction with OJCS, apply special access programs in the context of the war game report, and report findings no later than December 15."[20]

The Special Access Program Review Group, chaired by the USD(A), developed an initial list of seventeen programs. It was decided to hold a meeting at an appropriately cleared facility at Andrews Air Force Base during the period November 29 through December 1, 1988 to: (1) review the war game results, with particular attention given to the methodology used, (2) make a final determination as to which black programs to include in the review, (3) conduct a qualitative analysis of the impact of black programs on the War Game Committee's work to date, and (4) provide necessary guidance, including technical performance data for use in the quantitative-based war games that were to follow. The results were to be briefed to the Special Access Program Review Group no later than December 15.[21]

On November 23, 1988, approximately one week after staffing of these plans with representatives of the members of the Competitive Strategies Council began, a memorandum sent to the chairman of the CS Steering Group informed him that a staff officer in OUSD(A) had said that the planned meeting at Andrews was being delayed one week. The reason given was that "the Joint Staff has not coordinated on the suggested memo. The Joint staff advises that they are 'working the problem'." The memo further advised the chairman that "[I] understand that there has been another tank session on this subject as well as the proposed JCSM [Joint Chiefs of Staff Memorandum] that attempts to alter the existing structure of the Competitive Strategies process inserting the Joint Chiefs between the Steering Group and Council."[22]

The Joint Staff -- in particular the vice chairman of the JCS -- and, to a lesser extent, the Services, and others, had many concerns, both stated and implied, with the plan for including black programs in the gaming and simulation analysis of the results of Task Force I. These included security of sensitive information and possible adverse

implications for the defense budget if the selected black programs did not fare well in the examination. By their very nature, black programs received special treatment by the DoD and Congress and were subject to much less scrutiny, both political and analytic, than were other programs. In addition, the Reagan administration was nearing its end. A number of high-level civilian appointees, including perhaps the chairman of the Competitive Strategies Steering Group, would be leaving the department within the next few weeks and months. It was at this point that it became known that the steering group chairman was being processed to receive the clearances needed to participate in the assessment of black programs of potential relevance for competitive strategies.

On November 30, 1988, Deputy Secretary Taft, in a memorandum to the steering group chairman, directed, "application of SAPs to [the competitive strategies] effort is to be placed on hold for the duration of this Administration."[23] And that is where things stood as the Reagan administration ended in January 1989 and the then-chairman of the steering group departed the DoD.

The War Game Committee was unable, then, to include a full complement of black systems in its gaming and simulation work. Exceptions were made, however, for two special aircraft programs. Upon completion of their six-month study, the committee concluded that, overall, applying the recommendations of Task Force I would enhance deterrence.[24] They briefed their results to the Competitive Strategies Council on September 15, 1988, and published their final report six weeks later, on November 1.[25]

In light of the, at times, unsettling events of the preceding month or so in the Pentagon, it was somewhat ironic that, between September 22 and October 17, 1988, (then) Vice President George Bush publicly advocated his support for competitive strategies in two presidential debates with Michael Dukakis and in two major foreign policy addresses.

## 2.8 FOLLOW-ON ANALYSIS OF THE WORK OF THE WAR GAME COMMITTEE

The War Game Committee had gone a long way in helping validate the work of Task Force I. But the committee had not had enough time, in the relatively short

span of six months, to conduct multiple runs of their combat simulations and otherwise explore potential sensitivities in its analyses. Neither had any affordability assessment or trade-off analysis within a fixed budget been conducted. But this had not been part of their charter. Working with the CSO, the committee compiled a list of the areas that merited further examination.

### 2.8.1 Office of Program Analysis and Evaluation, OSD

A plan was devised whereby the Office of the Assistant Secretary of Defense for Program Analysis and Evaluation (PA&E) would take responsibility for developing and managing the execution of the required follow-on analyses. The initial joint planning meeting between representatives of the War Game Committee and PA&E was held on October 25, 1988. Other sessions followed.

One month later, as planning was moving forward, the November 30, 1988 memo from the Deputy Secretary to the steering group chairman, noted earlier in connection with the issue of gaming black programs, set forth a requirement for "a correct follow-on analysis to determine the reliability and validity of Task Force I results."[26] Based on earlier coordination with the War Game Committee, PA&E was prepared to act on the Deputy Secretary's directive. The plan agreed upon called for the Institute for Defense Analyses (IDA) and BDM, the two contractors employed by the War Gaming Committee to do their original modeling, to perform the work. On February 6, 1989, the Deputy Secretary approved the release of $600,000 from the Secretary's study fund to support "follow-on and tradeoff analyses on [the] strategic applications and findings" of the Competitive Strategies War Game Committee report on Task Force I.[27]

In a memo to the assistant secretary in charge of PA&E, the action officer responsible for managing the follow-on analysis later recounted that PA&E had developed:

> ... a plan with the overall objective of examining, through a series of sensitivity analyses, the variability in the outcomes of the competitive strategies previously analyzed by the Wargame Committee and to provide confidence that the strategies have undergone testing for

validity and variability. The first phase would identify the elements (packages of systems) of CS, the individual contribution of each element to the overall results, the variability in these contributions and the resulting variability in the Wargame Committee results. Phase II would expand this original sensitivity analysis to determine the effect of Soviet countermeasures and alternate force allocations on the individual element contributions and the overall Wargame Committee results.[28]

The deadline for completing this program of work was set for July 15, 1989. By June 16, Phase I was well along toward completion, and the question arose as to whether to proceed with Phase II. Moreover, going as far back as the fall of 1988, interest had been expressed in looking at the budgetary aspects of Task Force I. With this in mind, the PA&E program manager went on:

> There are many questions to be asked of the Competitive Strategies Task Force I concept. Particularly important are the cost of implementation, a trade-off analysis to determine how well the strategy works when existing capability is cut to pay the bill, and how the results of the strategy change in the new environment of the recent Soviet and U.S. arms control initiatives. These questions cannot be answered, however, until we know if the initial analysis is of any value.[29]

In brief, if PA&E was to do any additional follow-on work, it should stick to the task as planned in order to develop an adequate base for further analyses. The head of PA&E was willing to proceed with Phase II. Apparently, however, the almost complete lack of purposeful activity in competitive strategies in the DoD led him to decide to cease work on the program.

### 2.8.2 The General Accounting Office

The staff of Congressman Andy Ireland (R, FL) had a keen interest in competitive strategies, the work of the War Game Committee in particular. Their concerns over some of the reported results of the committee's analysis prompted Representative Ireland, on January 24, 1989, to ask the General Accounting Office (GAO) to assess the

committee's work. The first meeting between representatives of the GAO and the Competitive Strategies Office was held in the Pentagon one month later, on February 28. The GAO analysts performed their work between February and December 1989 and submitted their report to Representative Ireland on May 17, 1990.[30]

The GAO team restricted its assessment to the overall design of the simulation that the War Game Committee had created to guide their work. The team's objective was to determine whether the games and simulations managed by the committee supported the DoD's conclusion that the competitive strategies proposed by Task Force I "were a more effective way of fighting a conventional war in Europe than some other strategies and, thus, can enhance the North Atlantic Treaty Organization's (NATO) deterrent capability."[31] The results of the investigation were perhaps best summed up in the title of their final report, "Military Strategy: Computer Simulations Did Not Clearly Validate Competitive Strategies."

The War Game Committee was well aware of the limitations of their work, due mainly to the relatively short period of time they had to complete it. It was, in fact, this realization that led to the meetings between the committee and representatives of OSD (PA&E) and the latter's subsequent design of a program of follow-on modeling and simulation that was approved by the Competitive Strategies Council, as discussed in the previous section. One of the major methodological issues regarding the committee's work -- that of the need to be able to isolate the effects of operational concepts and hardware systems on the outcomes produced by models and computer-based simulations -- is treated in Chapter 4.

In short, the GAO report, while well rendered technically and thus a useful addition to the historical record of the DoD's Competitive Strategies Initiative, did not raise any major issues that had not already been identified by those who were regularly involved with competitive strategies in the DoD. It would have been much more helpful, not to say more cost effective in terms of the GAO team's time and effort, if the investigation could have awaited the completion of the entire program of analysis related to the work of Task Force I.

### 2.8.3 The Joint Staff

As noted earlier, owing to considerations of planned workload and the time constraints imposed by the Competitive Strategies Council, the Joint Staff had declined to conduct the gaming work required by the council to assess the validity of the work of Task Force I. With the publication of the War Game Committee's results, the Joint Staff began conducting its own analysis of the work of the committee and Task Force I.

At one level, this analytic effort by the Joint Staff was seen as reasonable and perhaps even useful. From another perspective, however, it was viewed with suspicion. The most basic reason was that, for all of the rhetoric to the contrary -- in the Pentagon, before the Congress, and to the media -- the Joint Staff was widely considered to be not genuinely supportive of the Secretary's Competitive Strategies Initiative. Indeed, over time, they had failed successively to: (1) render it stillborn, even as Secretary Weinberger was trying to bring it into being; (2) discredit it by, at times, unfairly and even falsely criticizing key aspects of the competitive strategies analyses -- aspects in which they themselves had participated from the beginning; (3) control it by subordinating it to the JSPS and the provisions of MOP-39 (Memorandum of Procedures 39, which severely restricts the distribution of JCS documents, particularly to audiences outside of the uniformed Services), thereby effectively eliminating hands-on involvement and management by senior civilian executives; and (4) neutralize its most knowledgeable and effective spokesmen.

More particularly, the Joint Staff's decision to conduct an in-house analysis was viewed with suspicion inasmuch as: (1) the Competitive Strategies Steering Group and Council, on which the Joint Staff and Services had senior members, had been kept fully informed of the committee's work from beginning to end; (2) a co-chairman the War Game Committee was an experienced and accomplished member of the Joint Staff's J-8 directorate, who previously had managed many similar large-scale analytic efforts; (3) several technical advisors to the committee had been drawn from the Joint Staff and the Services; (4) the Joint Staff and the Services were kept abreast of all aspects of the committee's work, through both formal and informal means, literally on a day-to-day basis; and (5) the War Game Committee was never afforded the opportunity to brief the results of

its own work to the military chiefs in the tank. Indeed, this critical presentation had been made by a Joint Staff officer who -- in the judgment of several members of the War Game Committee, the Competitive Strategies Office, and others -- while otherwise highly accomplished and well regarded, not only had not been involved in the work but did not have the background or the experience necessary to convey adequately the many important technical aspects of the War Game Committee's extensive analysis.

The Joint Staff conducted its review in two phases. The first phase looked at warfighting considerations, campaign strategies, and the quantity, cost, and producibility of the enabling systems used by the War Game Committee in evaluating the work of Task Force I. In the second phase, the strategy initiatives proposed by Task Force I were evaluated in a global context as part of the Chairman's Net Assessment for Strategic Planning (CNASP). The assessment applied fiscal constraints to the types and quantities of enabling systems and evaluated political considerations, Soviet reactions and countermeasures, C3I degradation, and arms control implications. The results of this review, dated December 1989, were sent to the Secretary of Defense on January 12, 1990.[32]

In sum, while the Joint Staff saw merit in some aspects of the work done to date on competitive strategies for NATO in the context of a global conventional war, they had serious reservations in a number of areas, including affordability and producibility. Ways of perhaps getting around particular constraints were proposed. The cover memo from the JCS chairman that conveyed the Joint Staff's assessment to the Secretary concluded, "In summary, the insight provided by the Report on Competitive Strategies Task Force I will be most useful as we make critical force structure decisions during this period of declining resources."[33]

## 2.9 OTHER REVIEWS OF TASK FORCE I: IMPLICATIONS FOR DEFENSE RESOURCE ALLOCATION

> Once we have decided upon an initial set of competitive strategies, I intend to incorporate them into the Department planning and programming process. I also intend to prioritize and, if possible, expedite those strategies throughout the DRB [Defense Resources

Board] process.[34]

So spoke Secretary Weinberger at the outset of the DoD Competitive Strategies Initiative in May 1987. His intent concerning the linkage he wanted to establish between competitive strategies and resource allocation decisionmaking in the DoD was thus made clear even before the topic for the first task force had been selected. Little more was said on the subject, at least officially, until Task Force I submitted its final report in November 1987 and Secretary Weinberger (then in the process of leaving the DoD), Secretary Carlucci, and other key officials in the Pentagon had been made aware of the task force's recommended strategic initiatives.

Concern within the Pentagon over the possible implications of competitive strategies for defense resource allocation had been present from the beginning, at least below the surface. But it heightened noticeably with the release of the list of systems and technologies, which the report of Task Force I suggested offered potentially high leverage in the context of the strategies they had recommended. As evidenced by Table 1, introduced earlier, this list generally emphasized a combination of advanced technologies, more prosaic technologies and existing basic systems (e.g., mines), unmanned delivery vehicles, special munitions, and C3I. In contrast, it made little mention of major systems, including manned aircraft, the Services' traditional top priorities.

On February 2, 1988, Secretary Carlucci sent a memorandum to the members of the Competitive Strategies Council which, for the first time, put the DoD on notice that, like Secretary Weinberger before him, he, too, saw merit in linking the results of competitive strategies planning and analysis with the DoD PPBS, and he wanted the department to take immediate preliminary steps in that direction. His memo is quoted in full as follows:

> The Competitive Strategies Initiative offers a framework for taking a hard look at our future defense needs. The recommendations contained in the report of the first Task Force appear feasible and have substantial merit, but require refinement before specific decisions are considered. Phase II of the implementation review will focus on long-term sizing and costing of the systems and technologies

associated with the proposals.

> As a first action to preserve the Department's budgetary options with respect to this initiative, I request that you review your POM [Program Objective Memoranda] submissions to preserve, in broad outline, the concepts represented in the Task Force's recommendations. I intend to discuss these maters with you in detail at our council meeting on February 19th.
>
> Mr. Dennis Kloske [steering group chairman] will be responsible for coordinating the implementation activities and will provide a detailed plan to the Deputy Secretary of Defense for execution of Phase II.[35]

Two weeks later, at their meeting on February 19, the Competitive Strategies Council began substantive discussions of the potential resource implications of competitive strategies. The following month, on March 11, the chairman of the Competitive Strategies Steering Group began participating in a series of meetings with the Competitive Strategies Acquisition Panel, chaired by the Director of Defense Research and Engineering. Less than three weeks after that, on March 29, the Competitive Strategies Office noted that the policy guidance section of the DoD *Defense Guidance* for FY 1990-94 "front loads competitive strategies as the basis for developing strategy and planning force posture." The CSO's journal quoted from the document as follows:

> Competitive Strategies offers a useful approach in formulating national security strategy, planning military forces, *allocating defense resources* [italics added], developing and assessing arms control proposals, and managing collective security."[36]

On September 26, 1988, the chairman of the Competitive Strategies Steering Group met with the Joint Chiefs of Staff in the tank in the Pentagon. He had been asked by the Deputy Secretary of Defense to present to the chairman and the chiefs a briefing on competitive strategies, including progress on analytic work conducted to date. The senior military officers present expressed general support for the competitive strategies concept, but were concerned over what seemed to them to be too much haste in attempting to have competitive strategies influence the FY90 defense program, then under development.

They were particularly concerned that the results of the gaming, which they viewed as preliminary in nature, at best, and which were scheduled to undergo a program of sensitivity analysis, might be used prematurely in influencing resource allocation decisionmaking. They called attention to many of the technical limitations that long have accrued to gaming and modeling in general and noted, correctly, that none of the gaming to date had dealt with the critical question of trade-offs. The view was expressed that, even though the new administration might revisit the choices made for the FY90 defense program by the departing Reagan team, competitive strategies could not adequately inform the deliberations of the Defense Resources Board until FY92.

Apprehension within the Pentagon over the possible implications of competitive strategies for the defense budget grew still further when, on October 5, 1988, the War Game Committee met with the Competitive Strategies Acquisition Panel to discuss the committee's findings regarding the relative utility of various systems and technologies in providing the capabilities required to operationalize the strategies recommended by Task Force I. The committee generally confirmed the findings of Task Force I. Just three weeks later, on October 25, the Defense Acquisition Board (DAB), chaired by the USD(A), received a similar briefing from the chairman of the Competitive Strategies Steering Group. Competitive strategies systems and technologies were the subject of yet another meeting of the DAB on December 5.

By the winter of 1988-89, the DoD had in hand the reported results of several major competitive strategies analytic efforts related to mid- to high-intensity conventional war in Europe in the context of a more general global conflict. At this juncture, it was decided to submit the entire body of analysis to a comprehensive review by OSD, the Joint Staff, the Services, and the CINCs. It was intended that the results of this review would be included in the Chairman's Net Assessment for Strategic Planning (CNASP), expected to be completed by the end of the year, as discussed in the previous section. The CNASP would provide a means for evaluating the candidate competitive strategies as a military option in conjunction with other U.S. strategic and operational alternatives.[37]

Secretary Carlucci's *Annual Report to the Congress, Fiscal Year 1990*,

released on January 17, 1989, noted that "at each stage of this extensive evaluation process, we are seeking to ensure that we consider all the factors that can help us decide if we should implement the Task Force's recommendations."[38] Without much question, an unusually deliberate effort was being made to be as thorough as possible. There was a growing widespread feeling, however, that there had been at least a tacit understanding among some senior officials, mainly in the Services and on the Joint Staff, to promote what amounted to "paralysis by analysis" in order to forestall the Secretary from taking programmatic action based on competitive strategies -- action that might prove disruptive to the Services' budget priorities.

## 2.10 TASK FORCE II

Early in 1988, about the time the War Game Committee began to evaluate the work of Task Force I, interest began to be expressed in seating a second task force. The CSO assembled a list of potential topics, and recommendations were made to Secretary Carlucci at a meeting of the Competitive Strategies Council on May 18, 1988. On May 24, Deputy Secretary Taft announced that Task Force II would consider the subject of U.S. non-nuclear strategic capabilities. The task force was directed to "evaluate operational concepts capitalizing on our greatly improved capabilities in conventional munitions and long-range, highly accurate weapons, and the potential they hold for achieving strategic goals in various conflict scenarios."[39]

Task Force II convened on July 11. As had been the case with Task Force I, members were drawn from OSD, the Joint Staff, each of the Services, and the Defense Intelligence Agency. The final report, dated, December 23, 1988, was released by Deputy Secretary Taft for staffing on January 31, 1989 and sent to the members of the steering group on February 2.[40] Their investigation resulted in ideas for exploiting four leverage points: (1) the Soviet war support capability, (2) integrity of the Soviet homeland, (3) the Soviet research, development, and acquisition process, and (4) information warfare.

## 2.11 REVIEWS OF THE WORK OF TASK FORCE II

On February 2, 1989, the Senior Intelligence Committee was asked to

provide an assessment of Task Force II's final report. It was intended to be completed in time to be briefed to steering group in April. The chairman of the SIC forwarded the committee's assessment to the steering group chairman on April 21.[41]

The timing of the release of Task Force II's final report coincided with the change in administrations. Owing to this change, the subsequent delay in appointing a defense secretary, and Secretary Cheney's initial lack of interest in competitive strategies, Task Force II never received the opportunity to brief the Competitive Strategies Council, which had ceased to function as it had under Secretaries Weinberger and Carlucci. They did, however, brief the CS Steering Group and the Defense Science Board's Task Force on Competitive Strategies (discussed in Section 2.12, below).

The general consensus among those who reviewed Task Force II's final report was that, overall, the product was much too general and abstract in its current form to be reasonably actionable. It was therefore recommended that the first two leverage points (Soviet war support capability and integrity of the Soviet homeland) be explored further, perhaps by another task force; the third (influencing the Soviet research, development, and acquisition process), be handed-off to the acquisition community, since they would have responsibility for implementing it when it was finalized, in any event; and the fourth (information warfare) be given over to the Joint Staff and the CINCs for their consideration. Given the lack of a commitment from Secretary Cheney to support competitive strategies in the new administration, and in light of the experience with the program of follow-on analyses of the work of Task Force I, still ongoing, there appeared to be a tacit agreement to just let the subject drop.

## 2.12 DEFENSE SCIENCE BOARD TASK FORCE ON COMPETITIVE STRATEGIES

One of the most valuable contributors to the DoD Competitive Strategies Initiative was the Defense Science Board Task Force on Competitive Strategies, established by the USD(A). The task force chairman was Norman Augustine, the highly regarded chief executive officer of Martin Marietta. Several day-long meetings were devoted to all major aspects of competitive strategies. One of the last sessions was held on February 7-8,

1989, during which the DSB task force was briefed by the War Game Committee and by the chairman of Task Force II and was informed of the results of follow-on gaming and analysis being conducted by OSD PA&E and the Joint Staff.

Following these extensive briefings, and as a result of their close association with competitive strategies for almost two years and their concerns, both substantively and politically, for the future of the initiative, the members of the DSB task force came to the conclusion that competitive strategies was at a critical crossroads. The following month, on March 31, Chairman Augustine sent to Secretary Cheney a personal memorandum detailing the task force's views on all of these matters.[42] It was a timely, comprehensive, and potentially very valuable communication to the Secretary from a distinguished independent body on how he might wish to influence the future of competitive strategies in the department.

The Augustine memo was hand-delivered to Secretary Cheney's office. Several weeks later, the document reappeared. It carried the initials of several civilian and military assistants in the Secretary's immediate office, indicating that they had seen it. But there was nothing to suggest that it had been seen by the Secretary. The members of the Competitive Strategies Office later were told that the Secretary's staff had not given him the Augustine paper.

## 2.13 COMPETITIVE STRATEGIES AND ARMS CONTROL

Task Force I had identified a range of systems and technologies that were expected to provide the U.S. and NATO with a competitive advantage over the Warsaw Pact in the decade of the 1990's and beyond. Matching or defeating this Western lead would pose a serious technological and economic challenge to the Soviets and their allies. One way out of this dilemma for the Soviets was to use diplomacy and the arms control process in an attempt to delay, constrain, or even eliminate this latest threat posed by the West in accelerating what they termed the "revolution in military affairs." This realization led the chairman of the Competitive Strategies Steering Group to initiate a separate program of work on the subject of competitive strategies and arms control.[43] The topic was discussed for the first time by the Competitive Strategies Council on February 19, 1988.

It was concluded that arms control was both a cooperative and a competitive process. The Soviets themselves saw arms control as a key instrument in the long-term strategic competition and developed their arms control objectives only after a careful consideration of a variety of assessments keyed to its military objectives. For their part, NATO and the United States needed to adopt a competitive approach to arms control in order better to clarify their own arms control objectives and evaluate Soviet proposals.

Lists of potentially high leverage systems and technologies that merited special protection by the West were developed, as were lists of possible Soviet objectives, likely future Soviet moves, and expected specific Soviet arms control proposals. From these analyses, a number of major implications were drawn for the U.S. and NATO. In brief, a competitive strategies approach to arms control could promote and protect U.S. and allied interests by providing a strategic framework for:

- Identifying U.S. and allied capabilities (e.g., doctrine, operational concepts, systems, technologies, etc.) that help gain and maintain strategic leverage in the long-term competition with the Soviet Union, and so should be protected.

- Helping identify Soviet capabilities that the West should seek to constrain or influence to its advantage through negotiations.

- Forecasting and assessing second- and third-order consequences of candidate arms control proposals.

- Reviewing proposals with potentially negative consequences before they are officially tabled.

- Facilitating the integration of U.S. arms control objectives with long-term defense strategy.

On May 10, 1988, a special paper summarizing the results of this work was sent to Secretary Carlucci and the members of the Competitive Strategies Council and CS Steering Group. The subject of arms control in the context of competitive strategies was discussed at every subsequent meeting of the council.

## 2.14 SOVIET RESPONSES TO COMPETITIVE STRATEGIES

Central to achieving the goal of competing more effectively and efficiently with the Soviet Union over the long-term was the need to influence Soviet perceptions and associated decisionmaking regarding the present and likely future state of the competition. Almost from the outset of the DoD Competitive Strategies Initiative, the Soviets began expressing concern, and even alarm, in a variety of media and other fora. Between the fall of 1987 and the winter of 1988, scores of articles appeared in *Military Thought*, *Pravda*, *Krasnaya Zvezda*, *Kommunist*, and other outlets. The Secretary of Defense and the chairman of the Competitive Strategies Steering Group received particularly harsh personal criticism in these reports. Georgiy Arbatov, director of the United States of America and Canada Institute of the USSR Academy of Sciences, was the source of a large proportion of these Soviet pronouncements.

It quickly became apparent that the Soviets: (1) were paying close attention to DoD competitive strategies program and were taking it very seriously; (2) had a highly sophisticated view of the realm of competition planning; (3) appreciated the intellectual power that competitive strategies planning and analysis offered the West in capitalizing on its enduring strengths and exploiting Soviet (often starkly self-admitted) enduring weaknesses; and (4) were forecasting a range of adverse future possibilities for themselves that the DoD's competitive strategies community might rightly have been accused of playing down or even overlooking in its daily efforts to keep the CS program on track and moving forward in the large DoD bureaucracy.

In December 1988, the chairman of the Competitive Strategies Steering Group and his staff prepared a series of papers that quoted liberally from the burgeoning collection of Soviet materials on the U.S. Competitive Strategies Initiative and provided them to the members of the CS Council and to others. In light of these revelations, the council decided that it would be useful for the Senior Intelligence Committee to render an annual report on Soviet responses to competitive strategies.

## 2.15 THE DOD PROCESS FOR DEVELOPING COMPETITIVE STRATEGIES

Over a period of slightly more than four years, from early 1986 until mid-1990, a general approach to developing competitive strategies for the long-term military competition with the Soviet Union had been worked out and implemented. The original concept papers, dating back to Andrew Marshall's work in the late 60's and early 70's, had been extremely useful in getting things started, but actual experience had dictated making adjustments along the way.

With the dramatic collapse of the communist bloc in Eastern Europe beginning in late 1989 and the startling pace of change in the Soviet Union, it was clear that, although there was an important role for competitive strategies in the time ahead, it would have to be recast so as to take better account of the evolving nature of the strategic environment. Some of the trends that were identified as having a potentially major impact on the future of competitive strategies included:[44]

- The continuing, if changing, nature of the long-term military competition with the Soviet Union.
- The increasing rate of change in military technology, including the proliferation of weapons of mass destruction and ballistic missiles capable of delivering advanced conventional, chemical, nuclear, and biological weapons.
- The growing multipolar nature of the global strategic environment.
- The growing importance of arms control as a factor in determining the size and basic nature of military forces.
- The increasing influence of economic considerations in the strategic calculus, including an expected dramatic decline in the size of the U.S. defense budget and the size of the U.S. military establishment.

It remains to be determined whether, and then to what extent, competitive strategies will continue to play a role in contributing to systematic and creative long-range competition planning in the Department of Defense.

In the interest of completeness, perhaps one final comment should be offered. In addition to the issue of black programs, other important points of policy guidance were contained in the memorandum of November 30, 1988 from Deputy Secretary Taft to the chairman of the Competitive Strategies Steering Group (mentioned in Section 2.7).[45] In their totality, these policies effectively derailed the DoD Competitive Strategies Initiative. The conventional wisdom among those most closely involved in competitive strategies at the time, subsequently corroborated by independent sources, was that the military Services, the Joint Staff, and some others had caused the memo to be written and delivered to Secretary Carlucci, who then directed Deputy Secretary Taft to sign it. The initiators of the memo had grown increasingly concerned over the possible adverse implications for the current defense program posed by competitive strategies, and increasingly resentful of the chairman of the steering group, whom they viewed as being too far out in front of the rest of the department with regard to strategic planning, in general, and associated resource allocation, in particular,

## ENDNOTES TO CHAPTER 2

1. Caspar W. Weinberger "Institutionalizing Competitive Strategy," memorandum dated January 9, 1987. (S)

2. Caspar W. Weinberger, "Management Plan for Institutionalizing Competitive Strategies," memorandum dated May 7, 1987. (C) See also Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1988* (Washington, D.C.: U.S. Government Printing Office, January 12, 1987), pp. 68-69; and his *Annual Report to the Congress for Fiscal Year 1989*, February 11, 1988, pp. 115-116.

3. *Annual Report to the Congress, Fiscal Year 1988*, op. cit., pp. 68-69.

4. "Management Plan for Institutionalizing Competitive Strategies," op. cit.

5. Tom Christie, Acquisition Member, Competitive Strategies Steering Group, "Revised Technology and Systems List," memorandum to Co-chairmen, Competitive Strategies Steering Group, dated June 12, 1987. (S)

6. Robert T. Herres, GEN, USAF, Vice Chairman, JCS, "Key Mission Areas," memorandum for Co-chairman, Competitive Strategies Steering Group dated June 16, 1987. (S)

7. Competitive Strategies Office, Office of the Secretary or Defense, "Competitive Strategies Chronology," October 5, 1990, entry for June 11, 1987.

8. Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Primer," April 1989, p. 12.

9. Ibid.

10. This document once existed, but the Competitive Strategies Office no longer has it on file.

11. "Competitive Strategies Task Force Final Report on Mid- to High-Intensity Global Conventional War," Office of the Secretary of Defense, Washington, D.C., November 1987. (S/NF)

12. *Annual Report to the Congress for Fiscal Year 1989*, op. cit., p 117.

13. Competitive Strategies Office, Office of the Secretary of Defense, "Competitive Strategies Briefing," (undated).

14. Ibid.

15. United States European Command, "Report on Competitive Strategies," June 19, 1989. (S/NF)

16. Senior Intelligence Committee, "Competitive Strategies Intelligence Study II," June 17. 1988. (S/NF/WN/NOCONTRACT/ORCON)

17. "Competitive Strategies Briefing," op. cit.

18. Under Secretary of Defense (Acquisition), "Systems List for CS Wargaming Committee," memorandum to Deputy Secretary of Defense dated April 6, 1988. (S)

19. Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1990* (Washington, D.C.: U.S. Government Printing Office, January 17, 1989), p. 48.

20. Frank C. Carlucci, "Follow-Up Actions on Competitive Strategies," memorandum to the Competitive Strategies Council and Assistant Secretary of Defense (Comptroller) dated October 28, 1988.

21. Office of the Director of Special Programs, Office of the Under Secretary of Defense (Acquisition), "Competitive Strategies Special Access Program Review," memorandum to USD(A) dated November 16, 1988.

22. "Special Access Program Review," memorandum to Director, Competitive Strategies Steering Group dated November 23, 1988.

23. William H. Taft, IV, "Competitive Strategies," memorandum for Chairman, Competitive Strategies Steering Committee [sic] dated November 30, 1988.

24. *Annual Report to the Congress, Fiscal Year 1990*, op. cit., p. 48.

25. "War Game Committee Report on Task Force 1," Office of the Secretary of Defense, Washington, D.C., November 1, 1988. (S/NF)

26. William H. Taft, IV, "Competitive Strategies," op. cit.

27. "Competitive Strategies Chronology," op. cit., entry for February 6, 1989.

28. Susan L. Marquis, "PA&E's Follow-on Analysis - Where Do We Go From Here?", memorandum to Assistant Secretary of Defense (Program Analysis and Evaluation) dated June 16, 1989.

29. Ibid.

30. United States General Accounting Office, Report to the Honorable Andy Ireland, House of Representatives, "(U) Military Strategy: Computer Simulations Did Not Clearly Validate Competitive Strategies," May 17, 1990. (S)

31. Ibid, p. 1.

32. Joint Chiefs of Staff, "Analysis of Competitive Strategies Task Force I," Final Report, December 1989. (S/NF)

33. Colin L. Powell, GEN, USA, Chairman, JCS, "Final Report of Analysis of Competitive Strategies Task Force I (U)," January 12, 1990. p, 2. (S/NF)

34. Caspar W. Weinberger, "The Competitive Strategies Concept," memorandum dated May 19, 1987. (S)

35. Frank Carlucci, "Competitive Strategies for NATO," memorandum dated February 2, 1988.

36. "Competitive Strategies Chronology," op. cit., entry for March 29, 1988.

37. *Annual Report to the Congress, Fiscal Year 1990*, op. cit., p. 48.

38. Ibid.

39. Ibid.

40. "Task Force II Report on Non-Nuclear Strategic Capabilities," Office of the Secretary of Defense, Washington, D.C.: December 23, 1988. (S/NF)

41. Soyster, Harry E., LTG, USA, Director, Defense Intelligence Agency, Chairman, Senior Intelligence Committee, "Review of Competitive Strategies Task Force II Report (U)," April 21, 1989. (S/NF)

42. Norman R. Augustine, Chairman, Defense Science Board Task Force on Competitive Strategies, "DSB Competitive Strategies Periodic Report III (U)," memorandum to Secretary of Defense Richard Cheney dated March 31, 1989. (S/NF)

43. This effort began as early as summer of 1987, when it was becoming increasingly apparent to some in the DoD and elsewhere that the INF Treaty, then in the final stages of drafting, contained provisions that, if left unchanged, would constrain, perhaps seriously, U. S. and allied flexibility in the development and fielding of high leverage conventional military capabilities. Some of this thinking was articulated on February 17, 1988, by James G. Roche of the Northrop Corporation in a presentation to the American Defense Preparedness Association Aerospace Conference on Competitive Strategies, entitled "Competitive Strategies and Arms Control."

44. "Competitive Strategies Briefing," op. cit.

45. William H. Taft, IV, "Competitive Strategies," op. cit.

# 3. CURRENT ANALYSIS TOOLS TO SUPPORT COMPETITIVE STRATEGIES

As evidenced by the discussion of the competitive strategies process in Chapter 1, and the chronological outline presented in Chapter 2 of the major analyses conducted in support of the DoD Competitive Strategies Initiative over the last four years, the practice of competitive strategies places heavy demands on defense analysis, both the codified body of professional knowledge and its practitioners. This chapter reviews the tools that generally have been available to support competition planning and analysis. It provides a framework for linking Chapters 1 and 2 with Chapter 4, which assesses selected major phases of the analytic work performed under the aegis of competitive strategies.

Andrew Marshall has long decried the lack of what he once termed an "infrastructure of specialized analytic tools" for supporting competition planning and analysis.[1] This stands in sharp contrast to the situation that obtained in the realm of systems analysis when it was introduced in the Pentagon in 1960. At the time, there already had been a decade or more of development of the needed tools at RAND and elsewhere. A cadre of people who had been involved in these efforts was available, as well. Little or none of this had occurred by the official beginning of the DoD Competitive Strategies Initiative in 1986.

With funding and guidance provided by Andrew Marshall, SAIC has been under contract to the DoD since 1985 to help fill this critical void by carrying out research on the nature of the U.S.-Soviet long-term military competition and on means for developing and implementing strategies for this competition. This effort has also taken account of the political, economic, technological, and ideological dimensions of the competitive environment, and has attempted to adapt the tools and techniques developed to a consideration of non-Soviet actors in an increasingly multi-polar world. A three-volume report of the results of this major program of work was published earlier this year.[2]

## 3.1 KEY CONCEPTS IN COMPETITION PLANNING

Certain concepts are important for systematically analyzing and debating

issues about the long-term competition and for devising and implementing competition goals and strategies. The first is the state of the military competition. This embodies the U.S.-Soviet military balance, the competitive positions of the two sides, and the state of achievement of the more traditional U.S. peacetime political-military objectives such as deterrence, reassurance of allies, and the ability to resolve crises peacefully.

The second involves breaking down the overall competition into subareas for planning and analysis purposes. This categorization generally should be regional in nature, but should also include at least one non-regional subarea: technology. Another possible, albeit less desirable, approach is suggested by the concept of key mission areas (KMAs), discussed in Chapter 2.

The centrality of U.S., Soviet, and third player moves and countermoves over a period of two or more decades is the third concept. This implies the need to focus strongly in competition planning on possible shifts in relative advantage over a long period of time and for use of Soviet-style analysis and other forms of emulative analysis in competition planning.

The final concept is that of portfolio management. This deals with future risks and opportunities in light of the considerable uncertainties associated with the future course of the military competition. It can be thought of as a set of techniques designed to limit or control the risks inherent in any one or more competitive strategies or actions within a subarea of the competition or across several subareas. These techniques should also make it easier for the United States to exploit new opportunities for realizing competitive advantages when they appear. Examples of portfolio management techniques include multiple, partially overlapping, competition goals and building into U.S. strategies and actions the ability to readily adapt to a competitor's actions or other changes in the competitive environment. Very importantly, the concept of portfolio management implies the active search, as part of the planning process, for more advantageous, robust, and adaptable combinations of competition actions and strategies selected for their ability to provide effective hedges against the uncertain and ever-changing nature of the competitive environment.

## 3.2 A LAYERED PLANNING APPROACH TO THE MILITARY COMPETITION

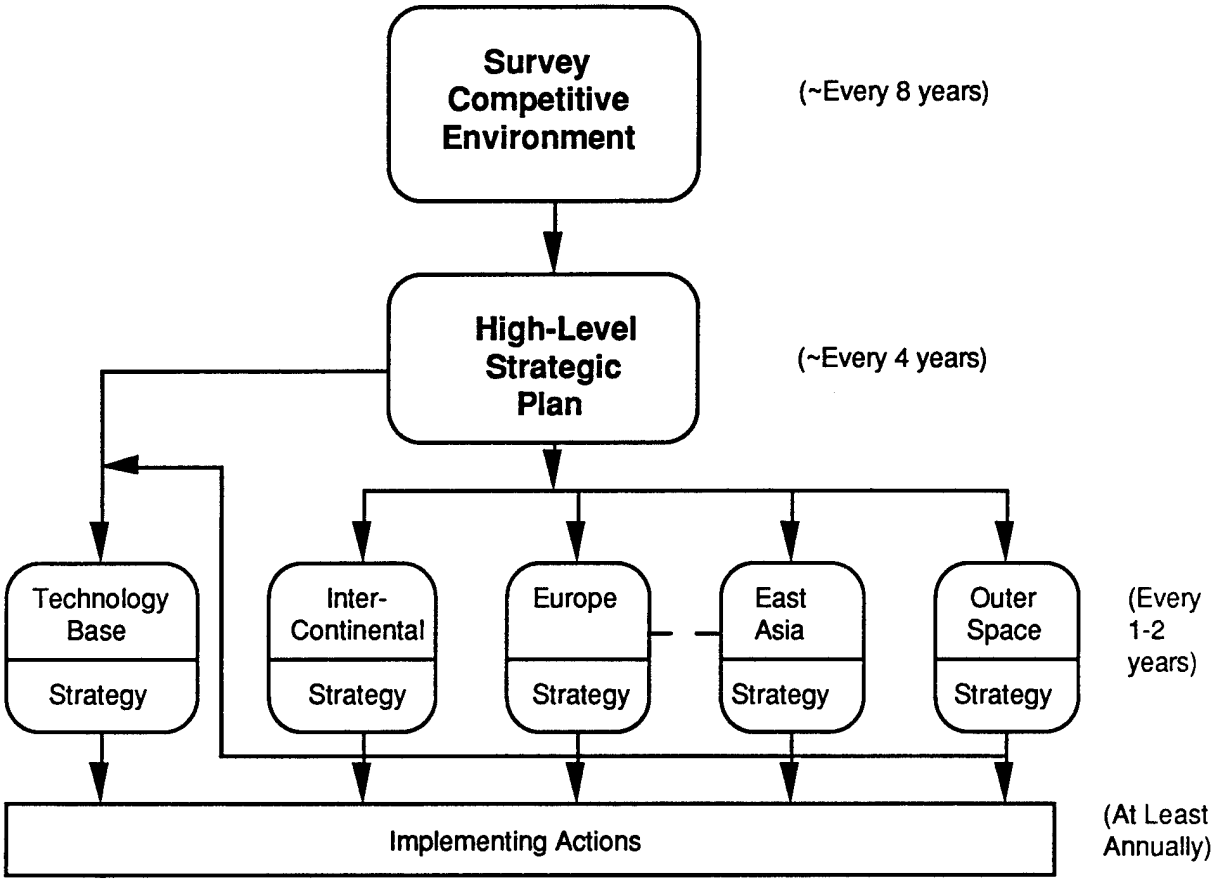
The complex nature of the peacetime military competition suggests that planning should be a layered process. That is to say, competitive actions in particular subareas should be subordinated to higher-level goals and integrated strategies for the competition as a whole. A hierarchy of four layers is proposed: a survey of the competitive environment, a high-level strategic plan, more detailed strategies for subareas of the competition, and actions to implement these strategies.

This layered planning approach can be viewed as a free-standing process, without relation to existing DoD or interagency planning mechanisms. However, if the U.S. government is to plan seriously and on a sustained basis for the military competition, the functions included in the hierarchy should be carried out explicitly in the DoD and interagency process.

Figure 3 is a graphic portrayal of the four-layer planning approach. The first layer is a survey of the competitive environment, probably carried out once during the term of office of an administration. Such a survey is needed periodically to validate or revise the assumptions underlying the current U.S. approach to the competition and to update U.S. understanding of risks and opportunities in the competition.

The second layer is a high-level strategic plan that establishes U.S. goals in the competition, sets forth the essentials of U.S. strategy for achieving these goals, provides strategy guidance to competition planners, and aligns U.S. commitments and resources in the competition. This plan should be updated more frequently than a survey of the competitive environment, perhaps every four years.

The third layer elaborates on the high-level strategic plan by formulating more detailed goals and strategies for each subarea in which the United States is competing and in which significant resources are expected to be expended. It was largely at this level that Competitive Strategies Task Forces I and II concentrated their efforts. Reviews and updates at this level should take place once every year or two.




Source: J.J. Martin, et al., *The U.S.-Soviet Long-Term Military Competition*, Volume II, "Planning and Analysis" (San Diego, CA: Science Applications International Corporation, June 5, 1990), p. 5.

**Figure 3. Generic Functions in Competition Planning**

In the fourth layer, detailed actions to implement the strategies developed in higher layers are formulated or updated. It translates the subarea strategies into implementing programs, force deployments, employment concepts, exercises, arms control positions, and other implementing actions. The follow-on analyses of the work of Task Force I, in particular the gaming of enabling systems, are examples of this type of analytic activity. An annual review is probably necessary at this level.

Viewed from another perspective, this four-layer approach provides for the essential steps in any long-range planning system for U.S. national security, as follows:

- Understanding the planning context in sufficient detail to test current assumptions about the competitive environment, key actors, and the strategies of U.S. adversaries (layer 1).

- Balancing U.S. commitments with U.S. capabilities and resources by selecting subareas to which most of the U.S. competitive effort is to be devoted and setting competitive goals that are consistent with U.S. capabilities and resources (layer 2).

- Setting broad and specific goals in the military competition (layers 2 and 3).

- Formulating alternative strategies and implementing actions for consideration by U.S. authorities (layers 2-4).

- Supporting these authorities in their selection from among the candidate strategies and actions (layers 2-4).

- Implementing these decisions by executing the selected strategies and actions, monitoring the state of the competition over time, and adapting these strategies and implementing actions as necessary (layers 2-4, and especially 3 and 4).

- Ensuring consistency among competitive goals and actions, and between broader U.S. national objectives and U.S. strategies and actions in the military competition (layers 2-4).

- Focusing planners on the long-term (as well as short-term) consequences of U.S. strategies and actions (layers 1-4, and especially 1 and 2).

- Building consensus within the Department of Defense, within the executive branch, and with Congress on U.S. goals, strategies, and actions in the military competition through participation of key parties in the planning process (layers 1-4).

Although the focus of the DoD competitive strategies effort has been on the U.S.-Soviet competition, these approaches take full and proper account of the diverse and fluid international environment in which the U.S. must plan for military competition with

other adversaries, as well.

While each of the four layers in the hierarchical planning approach need not be institutionalized in a formal sense, proper development of strategies for the military competition demands that each be carried out somewhere, somehow. Moreover, analytic support should be provided in each layer if competition planning is to move from the realm of intuition to become a structured process in which key bureaucratic parties play a systematic role.

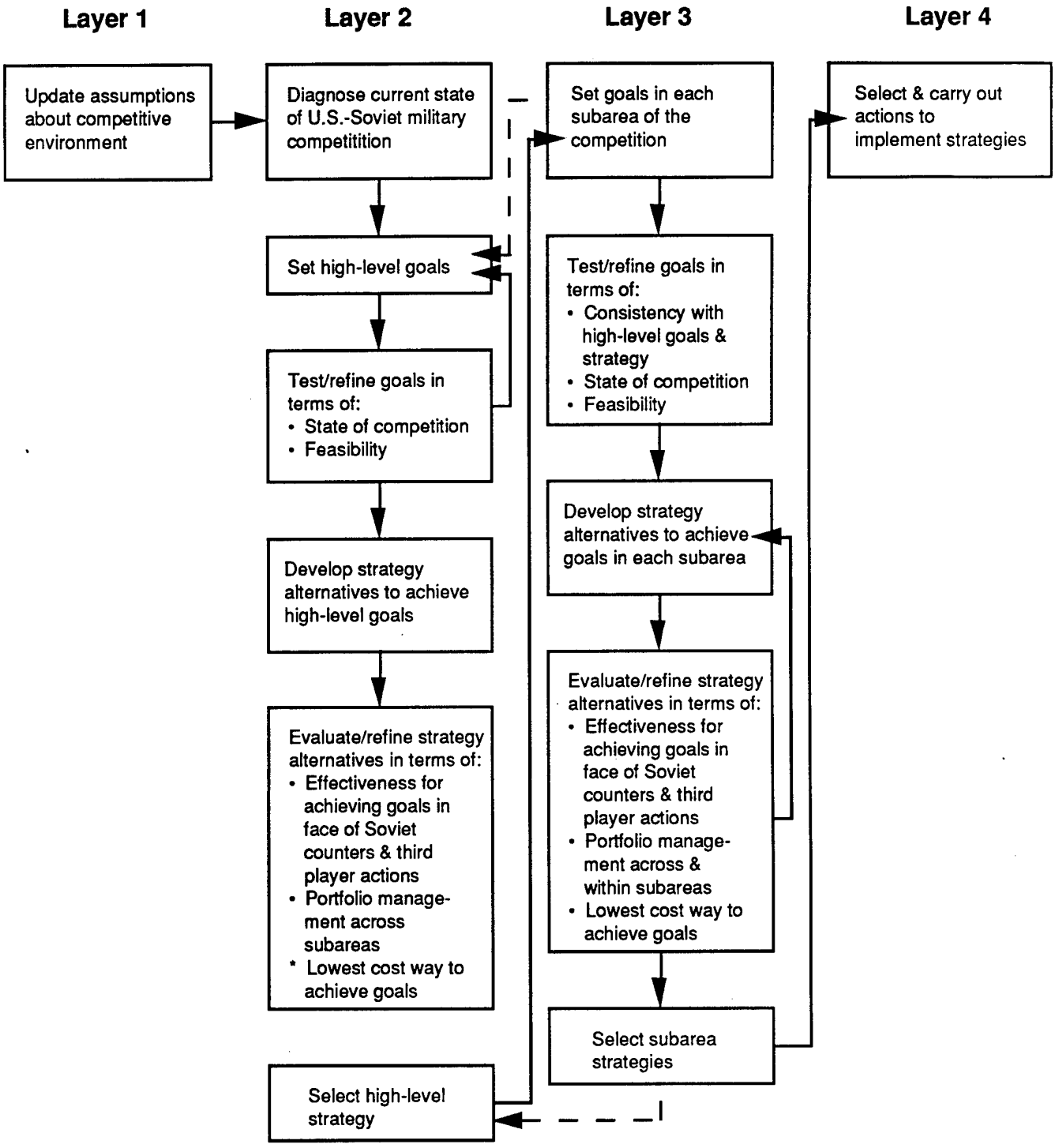
## 3.3 SEQUENCE OF ANALYSIS TO SUPPORT COMPETITION PLANNING

By combining the hierarchical planning approach with the concept of the state of the competition and adding cost considerations (which are implicit in the approach portrayed in Figure 3), a generic sequence of analyses to support planning for peacetime military competition can be outlined, as shown in Figure 4.

An iterative approach to the analysis of alternative goals and strategies is at the heart of the sequence depicted. Not only does this technique best suit the intellectual challenges of strategy development, it also suits the organizational challenges by providing opportunities for the preferred goals and strategies of each bureaucratic party to be considered as alternatives in the analysis process. To summarize, the following sequence of analysis should be carried out, with appropriate iterations:

- Diagnosis of the current state of the competition, in light of current planning assumptions and trends in the competitive environment, to provide a basis for setting goals.

- Formulation and evaluation of alternative U.S. goals and strategies for improving the state of the competition, in an iterative process of winnowing and refinement that arrives at a single preferred set of goals and strategies. The essential task for analysis in the process of strategy development is to determine how to move from the current state of the




Source: J.J. Martin, et al., *The U.S.-Soviet Long-Term Military Competition*, Volume II, "Planning and Analysis" (San Diego, CA: Science Applications International Corporation, June 5, 1990), p. 31.

**Figure 4. Analysis Sequence for Competition Planning**

competition to a desired state that is embodied in a set of goals. Consideration should be given to first-order checks on the economic, political, and technological feasibility of the goals. Analysis should evaluate the effectiveness of each alternative strategy in achieving the desired goals

- Support to the projection of future states through development and analysis of Soviet and third player goals, strategies, and actions in the military competition.

- Evaluation of alternative future states of the competition in terms of combat outcomes in various war scenarios, using contingency analysis. This evaluation of alternative future states contributes to the selection of goals and strategies.

- Synthesis of a portfolio of strategies and actions from the above analytic steps. As noted earlier, in all layers of the planning process, portfolio management techniques should be applied to control potential risks, mitigate the consequences of risks that materialize, and help exploit opportunities for unexpected advantage.

## 3.4 SUMMARY OF ANALYSIS REQUIREMENTS

The foregoing discussion permits summarizing the functions that analysis must be able to carry out in order to support competition planning. Nine major functions or analytic requirements emerge as a standard against which to evaluate current analysis capabilities discussed in the following section:

- Identify changes in the competitive environment in order to validate or revise current planning assumptions.

- Diagnose the current state of the competition as an aid in setting U.S. competitive goals.

- Determine Soviet goals and strategies.

- Determine the competitive goals and strategies of key third players.

- Determine how U.S. competitive goals, strategies, and actions are likely to affect the Soviets (e.g., in terms of weapons acquisition, operational concepts for force employment, etc.).

- Help set U.S. high-level competitive goals and U.S. goals in subareas of the competition.

- Identify a range of plausible Soviet and third party moves and countermoves.

- Evaluate alternative U.S. strategies for the military competition.

- Evaluate alternative U.S. portfolio management techniques in the context of specific strategy alternatives.

## 3.5 EVALUATION OF CURRENT ANALYSIS TOOLS

This section reviews nine classes of analysis tools and techniques in terms of their suitability to support competition planning. The terms analytic tools and techniques refer to methods of analysis broadly defined, including analysis concepts and systematic approaches or procedures, as well as algorithms and computer programs. Included are both quantitative and non-quantitative, but nevertheless systematic and rigorous, tools and techniques.

The following classes of tools and techniques will be discussed:

- Techniques for modeling and analysis of discrete military systems, military operations, and military support.

- Strategic planning tools for businesses.

- The classical analysis tools of logic and expert judgment.

- Regional political-military analysis.

- Forecasting techniques.

- Military balance assessments.
- Analysis of Soviet capabilities and intentions and other forms of emulative analysis.
- Gaming techniques.
- Combat modeling, especially at the theaterwide campaign level.

Defense analysis tools can be grouped into two broad categories. The first includes those tools that support the PPBS and JSPS. The other group is uniquely associated with competition planning. The differences between the PPBS/JSPS and competition planning were discussed in Chapter 1. The criteria that analysis tools to support competition planning must meet include the ability to examine both the near term and the far term over two decades or more; sensitivity to changes in the competitive environment; sensitivity to Soviet, other competitor, and third player goals, strategies, and actions; and an orientation to key factors in the state of the competition, especially military balances, contingency outcomes, and the competitive positions of the two sides.

Since analysis tools and capabilities currently in use within the Department of Defense generally are tailored to support the PPBS and JSPS, they commonly are not directly applicable to competition planning. Nor are the analysis tools and techniques used for business planning generally applicable. Several of these tools have, however, the potential to support competition planning. More importantly, four tools currently in use within parts of the DoD are notable exceptions to the general conclusion regarding current DoD tools. Net assessments, Soviet-style and other forms of emulative analysis, planning games, and contingency analyses can contribute directly and importantly to competition planning, but even they need improvements.

### 3.5.1 Modeling and Analysis of Military Systems, Operations, and Support

The primary tools included in this case are operations research, systems analysis, and engineering trade-off analysis methods and models. As such, these tools are

used extensively by DoD organizations and contractors to support weapon system acquisition and the PPBS. Their use is increasing in the JSPS.

Clearly, these tools have a large role to play in the selection of implementing actions in layer 4 of the hierarchy outlined above. This is the interface between competition planning, properly understood, and resource allocation via the PPBS. This type of modeling and analysis is not applicable to layers 1-3, where problems are fuzzy and not well-defined, the processes involved in the competition are not well understood, the range of possible adversary and third player actions is too wide to be captured in a tractable list of alternatives, and the unfolding of the unique and complex course of the competition is not amenable to the use of quantitative models or even stochastic analysis.

### 3.5.2 Strategic Planning Tools for Businesses

Like many of the analysis tools and methods discussed in this chapter, strategic planning tools for businesses seem like they should have considerable utility for competition planning. Upon closer examination, however, they prove not to do so. Some broad strategic planning concepts such a portfolio management and competitive advantage are useful, but primarily through analogy rather than directly. More specific tools do not appear to have the potential for supporting military competition planning.[3]

The main reason for this finding is that business planning can be thought of as a "well-behaved" problem, at least in comparison with planning for the military competition. Hence, analysis methods that may work well in the former milieu are not transportable to the latter. For example, use of single actor, rational decisionmaker organizational models can be defended for business planning, even though they represent an approximation that may be particularly dubious for large businesses. Such models are even less appropriate for military competition planning. Moreover, unlike the military competition, business planning has well-defined, quantifiable measures of effectiveness in terms of growth and profit, and the set of possible options for actors in the business world is relatively small.

Even within the relatively well-behaved realm of strategic planning for businesses, current analysis tools do not provide much direct support for setting goals and

selecting strategies. These important but difficult problems of business planning are addressed to a considerable extent in the same way they currently are addressed in military competition planning: by instinct and common sense, rather than by detailed analysis.

Some applications of business planning techniques have potential as tools for supporting competition planning. Simulations are a case in point. But, even here, skepticism results from the complexity of the military competitive environment, the rich set of choices available to each side, and the highly imperfect understanding of the relations between and among these variables. The use of military balance assessments, adversary move/countermove games and analyses, and military contingency analyses are proposed as the best approach to understanding the structure of the U.S.-Soviet or U.S.-other actor competition, rather than an approach that in some fundamental way is based on computer simulations.

Some broad analogies that research suggests are helpful in understanding planning approaches to the military competition include the following:

- The need to understand the strategic environment in which the competition is taking place.
- The use of detailed models to help determine what variables are important in the strategic environment and to help select specific strategies in light of trends in these variables.
- The use of gaming to help understand what the plausible range of adversary actions might be and possibly to aid in understanding the consequences of changes in the strategic environment.
- Portfolio management.

The general utility of these concepts acknowledged, their details need to be reworked considerably before they can contribute substantively to military competition planning.

### 3.5.3 Classical Analysis Tools: Logic and Expert Judgment

Logic and expert judgment have been combined in a tradition of analytic essays that goes back to the early Greek philosophers, epitomized in the writings of Plato. The analytic essay is still a powerful tool and is used in such varied fora as international security journals and Pentagon staff papers. The reports produced by the DoD competitive strategies task forces are examples of this genre.

The essential methodology of the analytic essay involves the application of inductive and deductive logic to facts and judgments, often guided by expert insights and intuition, and the synthesis of the results into a coherent set of conclusions. The best of the analytic essays go beyond induction and deduction to formulate new perspectives on security issues, define new problems for consideration, synthesize conclusions, and propound policies.

The analytic essay has a clear place in competition planning, including the following:

- Identifying important trends in the competitive environment.
- Characterizing the state of the military competition.
- Formulating and resolving issues about U.S. goals and strategies in the military competition.
- Achieving consensus on U.S. goals and strategies and promulgating policy guidance to implement U.S. strategies.

Expert judgment techniques should be used primarily to develop insights for analysis, not as a substitute for the analytic process. They should be drawn upon sparingly, focused as narrowly as possible on relatively uncomplicated questions, backed by explicit statements of the experts about why they reached certain judgments, subjected to critical review and debate, and tested against data and analysis wherever possible.

The areas of competition planning where expert judgment probably can most usefully be applied are the following:

- Understanding what trends in the competitive environment are most important.

  Developing a range of plausible future moves or countermoves by adversaries or third players.

- Formulating candidate U.S. goals and strategies for analysis.

### 3.5.4 Regional Political-Military Analysis

Regional political-military analysis is a form of the analytic essay in which logic and expert judgment are combined with summaries of pertinent country data and political forecasting. Such analyses that are directed specifically at competition planning issues can make a number of contributions, including the following:

- Aid in understanding the competitive environment.

- Help to make U.S. competition planning assumptions about the behavior of other countries explicit.

- Help to offset the U.S. tendency to attribute U.S.-style outlooks on the competition to other countries and thus to facilitate improved understanding of the regional constraints and opportunities associated with U.S., Soviet, and third player moves and countermoves.

- Assist in explaining U.S. goals and strategies to allies and other key regional actors, and in implementing U.S. strategies that have regional components.

### 3.5.5 Forecasting Techniques

Forecasting is the extrapolation of current trends into the future, using some form of systematic analysis (often quantitative) combined with judgment. Several kinds of

forecasting potentially are relevant to military competition planning: political, economic, demographic, technological, military, and cost. Forecasting has a number of applications in competition planning, notably in characterizing the competitive environment, projecting adversary moves or countermoves, setting U.S. goals, and selecting strategies.

The limitations of forecasting techniques should be kept clearly in view when using these tools for competition planning. First, they do not deal adequately with the discontinuities that sometimes will occur. Second, it is easy to overlook the often considerable uncertainties associated with projections that go beyond a few years into the future. Unfortunately, it is exactly these long-term forecasts that are most useful for competition planning.

Forecasting will never be an exact art, especially for the kind of long-term forecasts that appear most useful for competition planning. The use of forecasting techniques for competition planning probably should dwell extensively on exploring uncertainties through sensitivity analyses and bounding projections, to aid in developing hedges, adaptive strategies, or other portfolio management actions.

### 3.5.6 Military Balance Assessments

Net Assessments of military balances are analyses of trends and asymmetries in the capabilities of opposing military forces. They generally are carried out in order to understand the consequences of shortfalls in U.S. or allied military forces and the opportunities provided by shortfalls in Soviet or allied capabilities, and thus contribute to setting priorities for improvements in forces, support, or doctrine. Net assessments are carried out primarily by the Director of Net Assessment in the Office of the Secretary of Defense, by the Joint Staff, and, to a limited extent, by the Services and congressional staffs.

Closely related are net technical assessments, which are analyses of trends and asymmetries in the capabilities of opposing forces in specific mission areas, such as fire support or submarine warfare, with an emphasis on technology. Net technical assessments are conducted by the Office of the Under Secretary of Defense for Acquisition

and sometimes by the Services.

Net assessments have strong potential as an analytic tool for competition planning, particularly to evaluate the current state of the military competition. Balance assessments can also contribute to identifying which changes in the competitive environment are most important (by evaluating the impact of such changes on the military balances), to determining Soviet goals and strategies in the competition (by highlighting Soviet problems in current military balances), and to setting U.S. goals in the competition (by analyzing U.S. problems in current balances). Obviously, net assessments can contribute directly and importantly to evaluations of military balances in various subareas of the competition. These assessments are the best means available for evaluating the U.S. ability to fight effectively in future wars, which is a key dimension of the state of the peacetime military competition.

As discussed below, contingency analysis -- or analysis of military combat in specific scenarios -- constitutes a class of analysis tools separate from military balance assessments. But the most advanced concepts for net assessments (and net technical assessments) draw extensively on contingency analysis to identify important force engagements in a campaign and to identify those trends and asymmetries that strongly affect war outcomes in order to focus balance assessments on these factors. Thus, contingency analysis should aid in applying balance assessments for evaluating the state of the competition and for other competition planning purposes.

A number of improvements in military balance assessments are needed before they can fully realize their potential to support competition planning:

- Extension of existing balance assessments to more regions and to a greater diversity of combat scenarios in the multipolar competitive environment.

- Development of methods for applying military balance concepts to assessment of the U.S. and Soviet competitive positions.

- Development of succinct summaries of military balance assessments for

use in brief descriptions of the state of the competition.

- Improved military balance assessment techniques, especially for focusing more strongly on war outcomes, for identifying the most important factors in complex balances, for easily analyzing a wide range of combat scenarios, and for synthesizing these analyses into a coherent assessment.

- Improved means for determining Soviet and third player views of military balances and for integrating these into coherent assessments.

### 3.5.7 Analysis of Soviet Capabilities and Intentions and Other Forms of Emulative Analysis

Analysis of current and future Soviet threats and behavior in the peacetime competition contributes primarily to the following areas of U.S. competition planning:

- Determination of Soviet competition goals and strategies.

- Assessment of the likely impact of U.S. competition goals, strategies, and actions on Soviet weapon acquisition and operational concepts for force employment.

- Projection of future Soviet behavior in the military competition, particularly the identification of a plausible range of future Soviet initiatives and responses, as an aid to evaluating candidate U.S. goals and strategies.

The same holds true for the analysis of other potential competitors.

It is both natural and bureaucratically necessary for the DoD to look to the intelligence community for the required analysis of the USSR and other adversaries and third parties in support of competition planning. However, the capabilities and resource allocation priorities of the intelligence community do not align closely with DoD competition analysis needs.

Traditionally, in peacetime, the community's greatest effort has been

devoted to determining the current order of battle and projecting it, estimating current and future characteristics of an opponent's weapons systems, and determining the location and readiness of enemy forces. While essential for evaluating the current state of the competition using net assessment techniques, these products contribute very little to other aspects of competition planning and analysis.

The intelligence community is responsible for estimating the possible effects of opponent capabilities and actions on the ability of the United States to achieve its goals. Though there is much debate about the desirability of focusing on intentions rather than on capabilities, it is generally concluded that the intelligence community is mostly responsible for providing estimates of capabilities and not for estimating intentions. Only the latter really requires an understanding of an opponent's rationale for various courses of action. It is this rationale that has been the focus of Soviet-style analysis. In Soviet-style analysis, the questions are why or when might the Soviets act. Analysis of capabilities addresses only "Could they?".

Although the emulation of Soviet decision processes in the defense arena should continue to receive high priority attention, the same logic can, and should, be applied to other likely competitors. Moreover, whereas, until now, emulative analysis has been a tool primarily used to help understand the military component of the competition, it can, and should, be applied to the other dimensions of national power, including the economic and the political, as well as to the world of commerce and business decisionmaking.

The way in which the intelligence community potentially could most strongly contribute to competition planning, then, is by drawing on Soviet and other foreign planning methods and information to estimate opponent competition goals and strategies and to project a range of future opponent competition moves and countermoves. Inasmuch as competition planning analysis has a planning horizon of twenty years or more and must consider a range of opponent options that current opposing planners may not now be addressing, replication or emulation of opponent planning processes is needed much more than is any intelligence that may be available on current plans.

Replicating the military planning process used by the Soviets, not to say other U.S. competitors, is not an area in which the intelligence community has been strong. Moreover, and as was demonstrated during the period 1987-1989 when competitive strategies was being actively pursued in the DoD, the community feels restricted bureaucratically in developing a range of alternative futures for current and potential competitors, and in identifying opponent actions for analysis by the department, especially actions that are intended as responses to future U.S. moves that are under evaluation by the DoD.

Thus, DoD competition planning should draw on support from the intelligence community, but should also draw on emulative analyses performed outside the community. The essential steps in an emulative analysis to support competition planning are as follows:

- Develop an estimate of the opponent's view of the threat.
- Identify possible opponent responses to this threat, reasoning as the opponent probably would. Four types of decisions should be considered in the military sphere. These include decisions about:
  - Military doctrine, objectives, and victory criteria.
  - The development of new weapon systems.
  - Priorities for basic research.
  - Operational art and tactics for force employment.
- Evaluate this set of response options, using opponent criteria and methods.

This type of emulative analysis can contribute in several ways to competition planning, as follows:

- Identifying subareas in which the opponent may choose to concentrate his competitive efforts in the future.

- Understanding opponent perceptions of U.S. actions and options.
- Anticipating opponent responses to U.S. strategies and actions.
- Identifying ways in which the U.S. can make effective opponent initiatives and responses more difficult.

Three improvements are needed in order to provide better analysis of the capabilities of the Soviets and other potential competitors in support of competition planning and to move more strongly toward institutionalizing emulative analysis, and especially Soviet-style analysis. They are as follows:

- More people need training and analytic experience along lines that give them a broad understanding of how Soviet decisionmakers think, plan, and decide.
- More efficient ways to use these individuals need to be established in the Department of Defense.
- Analysts or strategists with little background in Soviet studies need to acquire greater skills in generating hypotheses for Soviet-style analysis and in working with the Soviet-style analysts.

### 3.5.8 Political-Military Gaming

Political-military games are simulations of selected aspects of the current or future world that focus on national security issues. What distinguishes games from other forms of simulation is the use of human players in the simulation in ways that capture adversarial or cooperative relationships.

The design of a specific political-military game is dictated by the purpose of the game, which may be used for training or education, for entertainment, or for analysis. Games used for analysis usually have one of three broad objectives: to explore a new political-military environment, in order to determine what may be important about the environment; to learn how to think about an ill-defined problem; or to test solutions to a

problem. Another way to classify games is according to whether they simulate combat situations (war games), crises and confrontations that could lead to war (crisis games), or peacetime political-military planning or competition (planning games).

During the 1950's and into the 1960's, political-military gaming had a certain ascendancy in the Pentagon and in research institutes like RAND. Gaming was a less prominent tool in military planning during the 1970's, but came back into greater use during the 1980's. Noteworthy gaming applications in the 1980's included war games to study alternative campaign concepts for force employment, path games to support SDI and nuclear and chemical force acquisition decisions, and recent games conducted by OSD Net Assessment to help define and then explore the implications of alternative future security environments.

Gaming has major strengths, but also major weaknesses. Both dictate how it should be used as a tool of analysis. The key strengths of gaming lie in the integral role of human players in the game process: the use of people to model complex human processes such as the interaction of adversaries, varying national styles of decisionmaking and command, national perceptions, and doctrinal predilections adapted to specific game situations. The role of humans in games and the relative scenario-independence of computer support for many types of games allow more rapid adaptation of games to new scenarios or problems than is the case for many other types of analysis tools, especially large combat models. Moreover, with the right game structure, players can themselves serve as analysts by, for example, synthesizing new alternatives for analysis or deriving analytic results from the game play.

The integral role of humans in games also is responsible for the major weaknesses of games as analytic tools. Games are not reliable predictors of competition, crisis, or combat outcomes, though they can indicate general trends, problems, or opportunities that result from a given set of initial game conditions and the goals and strategies of the contending parties. Moreover, games tend to be manpower intensive and, hence, costly and time-consuming to set up and operate, although progress may be possible in reducing the resources needed for games.

The primary application of games to competition planning should be in the form of peacetime planning games, with contingency analysis (rather than gaming) being the primary means for evaluating goals and strategies in potential combat conditions. Gaming and contingency analysis have naturally complementary roles in setting U.S. competition goals, evaluating alternative U.S. strategies, and analyzing candidate portfolio management approaches.

- Gaming can serve as a kind of coarse filter to identify the most promising candidate U.S. goals and strategies in the context of U.S. and opponent moves and countermoves over time. It serves this purpose by helping determine the future state of the military competition likely to result from each candidate set of U.S. goals and strategies.

- Contingency analysis is the evaluation of military effectiveness and likely war outcomes when U.S. and opponent forces associated with a future state of the competition fight one another in various contingency scenarios. Contingency analysis can serve as a more refined tool for testing the candidate goals and strategies that emerge from the filter of the gaming analysis. Combat models are a key part of contingency analysis.

More specifically, competition planning games should have the following purposes in the analysis of candidate U.S. goals, strategies, and portfolio management approaches:

- Serve as a test bed for alternative U.S. competition goals and strategies by simulating peacetime moves and countermoves in which the adversary is seeking to block or undercut U.S. initiatives and to make competitive gains through its own initiatives.

- Evaluate the sensitivity of alternative U.S. goals and strategies to third player goals, strategies, and actions.

- Explore the uncertainties associated with future moves and countermoves in order to identify U.S. problems and opportunities to be addressed by portfolio management actions.

- Identify key military contingencies for more detailed combat analysis

and determine the future military balance likely to result from a move/countermove sequence, as an input to these contingency analyses.

Improvements in current planning game techniques are needed before gaming can realize its full potential as an analytic tool for competition planning. These improvements include the following:

- Devising ways to move players realistically into future security conditions, in the sense of causing players to emulate credibly the actions of decisionmakers in conditions of ten to twenty years or more into the future.

- Reducing the cost, manpower, and set-up times for useful, credible analytic games.

- Converting move/countermove games into estimates of future states of the competition.

- Increasing the number of variations on U.S. and Soviet goals and strategies that can be examined in a fixed number of games (i.e., improving game productivity).

- Developing practical, efficient ways to capture and archive in games the results of past competition analyses.

With respect to the specialized area of contingency analysis, at least four areas require improvement in order to enhance the DoD's ability to carry out contingency analysis in support of competition planning:

- Increasing the adaptivity of combat models to analyze a wide range of different military force balances in a variety of quite different war scenarios.

- Reducing the time and costs required for contingency analysis, so it does not become a major bottleneck to expeditious planning.

- Improved methods to generalize from the detailed analysis of a variety

of war scenarios to determine preferences and rankings among alternative future military balances.

- Exploration of Simnet concepts to make a possible major upgrade in the ability to model and analyze future forces and employment concepts with much more realism than is possible today.

### 3.5.9 Combat Modeling

Combat models are simplified representations of military combat in which the kinds and degrees of detail are determined by the specific analytic purposes for which the models are designed. Quantitative models of combat include simple mathematical models, computer simulations, interactive campaign models, and the combined computer and physical simulations of the Simnet system.

This listing of combat models is organized by type, but it is well also to have the range of applications of combat models in mind, because these applications, many of which have little direct relevance to competition planning, heavily influence the design of specific models. Major model applications include the following:

- Battle planning: the preparation of concepts, doctrine, and plans for wartime operations, based on friendly and enemy orders of battle, the existing strategic or tactical environment, and specific missions or objectives.

- Wartime operations: the conduct of war, which is distinguished from battle planning by knowledge of the availability of friendly and enemy forces, the objectives for friendly and enemy forces, and actual performance capabilities of weapons.

- Weapon system procurement: the design of weapon systems or selection from among competing weapons.

- Force sizing: decisions about how many weapon systems, delivery platforms, and force units to procure, operate, and support in the future.

- Logistics planning: the structuring, sizing, and operation of military

logistics support.

- National policy analysis: policy analyses (e.g., arms control or broad national strategy) that are influenced by or influence military combat capabilities.

Combat models are most useful for the analysis of combat situations in which adequate data and understanding of the forces and doctrines of the opposing sides are available, so that the model can capture the important physical and dynamic relationships of the combat situation being analyzed. Models can be particularly helpful in these cases if they can generate multiple runs to facilitate sensitivity analyses without undue costs and in a time period that can support decisions.

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Combat models are less helpful -- and can be misleading -- when applied to situations in which the types of forces, the balance of forces, the doctrines of the opposing sides, or other aspects of the combat situation such as the terrain are quite different from the combat conditions for which the models were designed. Highly detailed computer simulations are especially difficult (and, therefore, costly) to adapt to new combat situations because of the way the original design conditions are imbedded in this class of model.

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Competition planning requires assessment of alternative future force balances as part of the evaluation of future states of the competition that could result from a set of U.S. goals and strategies in the military competition. Combat models have a natural role in this evaluation by providing a capability to evaluate future force balances in contingency analyses -- the pitting of these opposing future forces against one another in war scenarios, using the combat outcomes in these scenarios as a means to help measure U.S. preferences for alternative future states of the competition.

The difficulty is that combat models designed for today's force balance regime may not be useful, and could be misleading, when applied to quite different military balance regimes in the future. For example, the current suite of models used in defense analysis has long been criticized for its inability to capture the current and increasingly expected future realities of the "fluid battlefield." Then there is the issue of modeling highly advanced technology systems. Aside from concerns for security (noted in Chapter 2

in connection with attempts to game black systems in support of the analysis of the work of Competitive Strategies Task Force I), there is the problem of a lack of measures of effectiveness (MOEs) adequate to capture what are often alleged to be the special effects created by these systems, especially when they are used in combination. Movement of the forward edge of the battle area (FEBA), the principal MOE employed by the Competitive Strategies War Game Committee, is a particularly coarse, yet a widely used, analytic measure.

Looked at somewhat differently, if current weapon systems provide pK values in the vicinity of 0.7 or greater, is the often much greater cost of comparable black systems really worth the additional cost? Or is the real difference between the two classes of systems actually greater than the theoretical additional 0.3 (or less) might suggest? Even more challenging is the problem of modeling the effectiveness of C3I systems in creating synergism by making possible the careful orchestration of a whole range of other military capabilities. At present, the tools simply are not available to support analyses aimed at pursuing these kinds of issues. The selection and use of measures of effectiveness is discussed further in Chapter 4.

### 3.5.10 Summary of Analysis Tools for Competition Planning

Analysis tools for competition planning should contribute to meeting the requirements discussed earlier in Section 3.4. Of the analytic tools surveyed in this chapter, four appear to have the greatest potential to support this analysis process: military balance assessments, emulative planning analyses, competition planning games, and military contingency analyses. Table 4 summarizes the primary and secondary contributions of these four tools to the competition planning analysis functions identified in Figure 4.

Analysis tools that can provide the primary capability to carry out every analysis function shown in Table 4 have not been identified. While the four major tools can make secondary contributions to identifying and evaluating changes in the competitive environment and determining third player goals and strategies, research is needed to improve support for these functions.

**Table 4. Contributions of Major Analysis Tools to Analysis Functions of Competition Planning**

| Analysis Functions | Analysis Tools | | | |
|---|---|---|---|---|
| | Military Balance Assessments | Emulative Planning Analysis | Competition Planning Games | Military Contingency Analyses |
| Identify/evaluate changes in competitive environment | S | S | S | |
| Diagnose current state of competition | P | S | S | S |
| Determine Soviet goals & strategies | S | P | S | |
| Determine third player goals & strategies | | | S | |
| Determine impact of U.S. actions on Soviet weapons acquisition & doctrine | | P | | |
| Set goals for the military competition | S | | P | P |
| Identify likely Soviet & third player moves/countermoves | | P | | |
| Evaluate alternative strategies for the military competition | | | P | P |
| Evaluate portfolio management alternatives | | | P | P |

**P = Primary contribution**
**S = Secondary contribution**

Source: J.J. Martin, et al, *The U.S.-Soviet Long-Term Military Competition*, Volume II, "Planning and Analysis" (San Diego, CA: Science Applications International Corporation, June 5, 1990), p. 115.

Other tools, most of them discussed in this chapter, can contribute to these two functions, as well as to other analytic functions listed in Table 4, as follows:

- Projections and assessments by the intelligence community can aid in understanding Soviet and third player goals and strategies, but the limitations of intelligence projections for long-range planning must be kept clearly in mind.

- Regional political-military analyses can contribute to understanding of the changing competitive environment, aid in making U.S. assumptions about the behavior of other countries explicit, help to offset the U.S. tendency to attribute U.S.-style perspectives to other nations, and improve the understanding of the regional constraints and opportunities associated with U.S., Soviet, and third player moves and countermoves. These analyses can also contribute to an improved U.S. ability to explain its competitive goals and strategies to allies and third players, and to implement U.S. competition strategies.

- Forecasting of economic, demographic, technological, and military trends can contribute to understanding the competitive environment. Further, forecasting can aid in understanding the constraints and opportunities associated with future U.S., Soviet, and third player competition goals and strategies, and therefore can help in projecting move/countermove sequences. Forecasting of future military force posture costs can serve as a feasibility check on U.S. goals and strategies.

- Logic and expert judgment in the form of analytic essays can contribute to identifying and evaluating key trends in the competitive environment, characterizing the state of the military competition, formulating and resolving issues about goals and strategies, and achieving consensus on goals and strategies.

- Artificial intelligence and expert system software have the potential to support emulative analyses, competition planning games, and military contingency analyses.

- Modeling of military manpower resources may contribute to feasibility checks on goals and strategies in light of demographic trends.

- Operations analysis and engineering trade-off studies are important tools for the PPBS and JSPS side of the interface between competition planning and more traditional DoD planning systems that is embodied in layer 4 of the competition planning approach discussed in Section 3.2.

The essence of competition planning analysis is evaluation of the current military balance, projection of a range of plausible future military balances likely to result from a given set of U.S. goals and strategies, and evaluation of the resulting possible states of the balance in terms of war outcomes in a variety of scenarios. For this reason, it is recommended that analysis to support DoD competition planning be centered on the four primary tools: military balance assessments, Soviet-style analyses and other forms of emulative planning analyses, competition planning games, and military contingency analysis.

Based on four years of experience with competitive strategies planning and analysis in the DoD, and extensive research on the subject, already mentioned, the Department of Defense should not invest substantial resources to adapt other, lesser, tools to competition planning. The greatest marginal returns for competition planning are most likely to come from investments to adapt and improve the four primary analytic tools for competition planning identified above.[4]

## ENDNOTES TO CHAPTER 3

1. Andrew W. Marshall, "Competitive Strategies - History and Background," paper presented at American Defense Preparedness Association Aerospace Conference on Competitive Strategies, Los Angeles, CA, February 17, 1988, p. 10.

2. J. J. Martin, et al., *The U.S.-Soviet Long-Term Military Competition,* Volumes I-III, final report prepared for Director, Defense Nuclear Agency and Director, Net Assessment, Office of the Secretary of Defense (San Diego, CA: Science Applications International Corporation, June 5, 1990). Volume I, "Concepts," describes the nature of the U.S.-Soviet long-term military competition, including concepts useful for understanding what is important in this competition and for developing strategies to compete effectively. Volume II, "Planning and Analysis," proposes a structured process for devising and implementing strategies for the long-term military competition, evaluates current analysis tools in terms of their adequacy to support competitive strategy development, and recommends improvements. Volume III, "Appendices," contains case studies and other background papers that supplement Volumes I and II. The present chapter is adapted from a more extensive treatment of current analysis tools to support competitive strategies provided in Volume II.

3. Because the negative conclusions about the utility of business planning tools for military competition planning are counterintuitive, some of the general rationale is reviewed in this section. A more thorough examination of the subject, based on extensive research and analysis, is contained in *The U.S.-Soviet Long-Term Military Competition*, op. cit., Volume II, "Planning and Analysis," pp. 62-76, and is organized as follows (the first three topics fall into the category of planning principles; the remainder are detailed methods and models): (1) principles of strategic planning, (2) case studies, (3) characterizations of the strategic environment, (4) capital budgeting for project evaluation, (5) portfolio management, (6) operations research methods for business planning, (7) computer simulations, and (8) business games.

4. These tools and their needed improvements are discussed in more detail in *The U.S.-Soviet Long-Term Military Competition*, op. cit., Volume II, "Planning and Analysis," Chapters 4-8.

# 4. ASSESSMENT OF SELECTED COMPETITIVE STRATEGIES ANALYSES

An overview of the Department of Defense's Competitive Strategies Initiative and supporting program of analysis undertaken between 1986 and 1990 was presented in Chapters 1 and 2. Chapter 3 offered a discussion of tools to support competition planning and analysis and identified nine major functions or analysis requirements that can serve as a standard against which to evaluate current analytic capabilities.

This chapter provides an assessment of selected major phases of the analytic work done under the aegis of competitive strategies in the DoD. It focuses on methodological considerations involving the application of various analytic tools in the conduct of competitive strategies analyses. It does not purport to judge either the substantive content of this earlier work or the conclusions or implications for policy, strategy, and defense programs drawn from it.

The assessment focuses on four major analytic efforts: Task Force I, Task Force II, the War Game Committee's work in assessing the validity of the strategies proposed by Task Force I, and the follow-on program of gaming and computer-based combat simulation developed to refine and extend the work of the War Game Committee. In addition, comments are offered with respect to selected aspects of the intelligence support provided to the Competitive Strategies Initiative, the selection and use of measures of effectiveness, and the future of gaming and simulation in supporting competitive strategies planning and analysis.

Before proceeding, it is well to note that anyone who had the opportunity to participate in, or just observe, the several years of work reported in these pages could not but be impressed with how hard so many people tried to do the job of pioneering competition planning in the Department of Defense, and do it well. Without question, the results were uneven. But this chapter is not intended as a criticism of the individuals involved. Rather, it is offered in the spirit of the basic wisdom of trying to learn from hard-won experience.

## 4.1 METHODOLOGY

Table 5 arrays the nine basic competitive strategies analytic functions, introduced in Section 3.4, against the tools generally available to support competition planning and analysis, summarized in Table 4. As in the case of Table 4, the letters "P" and "S" indicate whether a primary or secondary contribution can be made to performing a given analytic function by one of the four principal tools: military balance assessments, Soviet-style analyses and other forms of emulative analysis, competition planning games, and military contingency analyses. The other tools discussed in Chapter 3 are included, as well. The numbers 1 through 4 within the matrix represent the four major competitive strategies analytic activities of interest, noted in the introduction to this chapter. They indicate where, in the course of a particular analysis, a given tool was employed in addressing a specific analytic requirement or function -- but without respect to the effectiveness of its use.

Before beginning the analysis, several aspects of the matrix merit mention. First, some tools are of little or no use in answering certain kinds of questions. To cite an obvious case, in contrast to their exceptional value in helping identify changes in the competitive environment, forecasting techniques have little to offer in diagnosing the current state of the competition. Second, some tools were not used because they were considered inappropriate by the analysts involved. For instance, inasmuch as the two task forces had only ninety days to do their work, and were expected to propose only general strategic concepts which would be subject to further review and analysis, they did not make use of any kind of combat modeling.

Third, some tools are analytically complementary. Regional political-military analysis and forecasting both involve extensive use of logic and expert judgment. Logic and expert judgment are also key components of military contingency analysis, where the output from combat models must be analyzed carefully by experienced professionals in order to determine what it does and does not mean. Examples of the misuse of the results of technical modeling by the inadequately informed are legion.

## Table 5. Use of Analysis Tools in the DoD in Addressing Competitive Strategies Analysis Functions

| Analysis Functions | Analysis Tools | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Military Balance Assessments | Emulative Planning Analysis | Competition Planning Games | Military Contingency Analyses | Modeling of Systems, Operations & Support | Strategic Planning Tools for Businesses | Logic & Expert Judgment | Regional Political-Military Analysis | Forecasting Techniques | Theater-wide Combat Modeling |
| Identify/evaluate changes in competitive environment | S | S | S | | 3, 4 | | 1, 2 | 1, 2 | 1, 2 | |
| Diagnose current state of competition | P 1, 3, 4 | S | S | S | 3, 4 | | 1, 2, 3 | 1, 2, 3 | | 3, 4 |
| Determine Soviet goals & strategies | S | P 1 | S | 1, 2, 3, 4 | | | 1, 2, 3, 4 | 1, 2, 3 | 1, 2, 3 | 3, 4 |
| Determine third player goals & strategies | | | S | 1 | | | 1, 2 | 1, 2 | | |
| Determine impact of U.S. actions on Soviet weapons acquisition & doctrine | | P 1, 2, 3 | 3 | 3 | | | 1, 2 | | | |
| Set goals for the military competition | S | | P | P | 3, 4 | | 1, 2, 3 | | | 3, 4 |
| Identify likely Soviet & third player moves/countermoves | | P 1, 3 | 3 | 3, 4 | | | 1, 2, 3 | 1, 2 | | 3, 4 |
| Evaluate alternative strategies for the military competition | | | P | P 3, 4 | | | 3 | | 3, 4 | 3, 4 |
| Evaluate portfolio management alternatives | | | P | P 1, 4 | | | 1, 2, 3 | | 3, 4 | 3, 4 |

**P = Primary contribution**
**S = Secondary contribution**

**1 = Task Force I**
**2 = Task Force II**

**3 = War Game Committee**
**4 = Follow-on gaming and simulation analysis**

Finally, planning games cannot begin to realize their potential without the inclusion of appropriate forms of emulative analysis. The literature is replete with discussions of how a particular game failed to realize its full potential because of the artificial or otherwise inadequate treatment given to "the other side," and how the use of a knowledgeable "red team" could have made a major difference.

The analysis begins with an assessment of the degree to which each of the nine competitive strategies analytic requirements were met in the four major programs of analysis under consideration. This is followed by an examination of the various tools of analysis -- how each was employed in meeting the analytic requirements shown.

## 4.2 COVERAGE OF THE ANALYTIC FUNCTIONS

In terms of an overall assessment, the analysis functions or requirements posed by competitive strategies were met very unevenly in the four major analytic programs of interest. Some were satisfied reasonably well, while others were all but neglected.

### 4.2.1 Identify/Evaluate Changes in the Competitive Environment

The challenge facing the two competitive strategies task forces varied somewhat with respect to identifying and evaluating change in the competitive environment. Task Force I met at a time when conditions in the Soviet Union and relations between the Soviets and the U.S. were generally as they had been for at least the preceding several years. The expected signing of the INF treaty in late 1987 was to be a significant event, but few observers were predicting anything even remotely resembling the changes that actually have taken place since then. Thus, except for reviewing existing regional political-military analyses, interviewing or being briefed by a variety of generally well informed sources, and otherwise applying logic and expert judgment in attempting to forecast the general evolution of military technology and take some account of the possible impact of conventional arms control, Task Force I spent little time or effort in attempting to create a rich futures context for their work.

The need to address this analytic requirement in a thoughtful,

comprehensive fashion had not been overlooked, however. In the summer of 1987, during one of the early meetings of the Competitive Strategies Steering Group, Andrew Marshall called for the development of a paper that would help frame the "global context" for planning U.S. national security strategy over the next several years. Such a paper, he said, would be helpful not just to the task forces, but to anyone in the DoD trying to plan for an uncertain future. For a number of reasons, those who logically might have been expected to assume this important task failed to do so. Almost a year passed, during which time nothing was done on the matter.

In the spring of 1988, when it was increasingly apparent that Mikhail Gorbachev was embarked on a social experiment that could have potentially profound long-term implications for the U.S., and the West more generally, the need for a "context paper" for competitive strategies resurfaced. In a meeting between the chairman of the Competitive Strategies Steering Group and his closest advisors, it was decided that the Senior Intelligence Committee should be requested to develop such a paper. A comprehensive set of questions intended to help provide structure for a set of terms of reference for this project were developed and conveyed as part of a tasking memorandum to the chairman of the SIC on July 27, 1988.

In a series of meetings with managers and senior analysts from the Defense Intelligence Agency, it was explained that what was needed from the SIC was a strategic forecast of a range of plausible alternative Soviet futures for at least the next fifteen years. Beginning with assumptions regarding a range of possible Soviet strategic political and military goals, economic conditions, and chances of success for *perestroika* and Gorbachev himself, they were to craft, by the fall of 1988, a spanning set of basic scenarios, perhaps as many as five. It was stressed that the steering group chairman was not interested in receiving a "best estimate" regarding the future of the Soviet Union.

Several weeks later, the intelligence analysts submitted a draft topical outline of their proposed report. Far from being structured in a top down manner, based on the kinds of first-order assumptions noted above, it began with a consideration of the short- to mid-term evolution of military doctrine and operations. Political and economic matters appeared later in the outline, almost as an afterthought. In short, the proposed structure for

the context paper was virtually the reverse from what had been requested. The outline did, however, allow for developing several scenarios; but the set proposed did not constitute what could be construed as a useful spanning set of cases. Additional meetings were held to clarify the requirement, but the strategic context paper needed by planners, analysts, and policymakers, alike, to help guide competition planning in the DoD was never completed satisfactorily.

By the time Task Force II convened, the onset of change in the Soviet Union was even more apparent. To many, however, the future still looked to be more of the same. Nonetheless, Task Force II asked for funds to conduct a series of contractor-supported competition planning games that would include experts in Soviet-style emulative analysis. They wanted to use the same tools to address several other analytic requirements, as well. Their request was denied, however, on the grounds that they only had ninety days to complete their entire program of work, and the steering group was interested, in any event, in what the task force thought about these matters. In hindsight, this appears to have been a missed opportunity. Thus, the results of Task Force II's efforts to develop a realistic appreciation of the changing nature of the future global security environment, in general, and the evolving situation in the Soviet Union, in particular, were only somewhat better than those of Task Force I.

Both the War Game Committee and the contractors who assisted their work, of whom the latter were also involved in the follow-on gaming and simulation effort, attempted to come to grips with the implications of advances in military technology for influencing the nature of the future security environment. As noted in Chapter 3, however, it proved very difficult, both bureaucratically and analytically, to take proper account of black programs, and even to assess the impact of those advanced technology systems that were in the public domain.

### 4.2.2 Diagnose the Current State of the Competition

Although logic and expert judgment tended to dominate the efforts made to assess the current state of the competition, and consideration was given, as well, to the results of modeling various kinds of systems, all four of the major analytic efforts

addressed here made at least some use of formal military balance assessments of one kind or another, the key tool for developing a solid understanding of this aspect of competition planning. Task Force I had gone so far as to request and receive a briefing on the military balance in Europe from the OSD Office of Net Assessment. There was no single balance assessment capable of meeting the more globally oriented, functionally specialized needs of Task Force II. The gamers and modelers had direct access to data bases that reflected, in some detail, at least the quantitative dimensions of the current balance.

Notwithstanding their very different information needs, neither task force appeared to have an adequate grasp of the state of the military balance in its area of interest. This was particularly the case with Task Force I. Some of its members tended to overestimate U.S. strengths and Soviet weaknesses and underestimate U.S. weaknesses and Soviet strengths. They also failed occasionally to make critical distinctions between the levels of war. For example, widely acknowledged Soviet weaknesses in creativity and initiative at the tactical level were initially arbitrarily extrapolated to the operational level. It was some time before the task force, as a group, came to understand that, by its very nature, the Soviets' planning capability at the operational level was quite sophisticated, robust, and flexible, as contrasted with the situation at the tactical level. For its part, Task Force II, in emphasizing the U.S. industrial base as an enduring U.S. strength, failed to take account of several major independent analyses that, over the course of a decade or more, had called attention to major fundamental and growing problems in this area.

### 4.2.3 Determine Soviet Goals and Strategies

Determining overall (vice more particular) Soviet goals and strategies was one of the most neglected analytic functions in all of the major competitive strategies analyses. To the extent that the Soviets were the subject of any kind of systematic scrutiny, it was handled the best in the analysis of likely Soviet and third player moves and countermoves, discussed below. Task Force I, the War Game Committee, and those involved in the follow-on gaming and simulation modeling looked at it mainly at the operational level and below, at times in considerable detail. As already noted, Task Force II attempted, albeit unsuccessfully, to obtain funding to address this, and several other, analytic requirements through gaming and emulative analysis. However, having failed in

this attempt, they made no real effort on their own to fill the void.

Perhaps the best overall effort here was that of the Task Force I subgroup that developed the global, multi-theater initiative. Their initial draft proposed strategy was viewed by the steering group chairman as being long on unsubstantiated assertions and short on reasonably supported strategic analysis -- that is, until they were directed to analyze several different military contingencies involving the Soviets. This they accomplished to good effect using logic, expert judgment, and the results of previously completed war games. It turned out to be a very demanding analytic task. In terms of what it revealed about how the Soviets might plan to conduct their part of the competition in this area, however, it appeared to have been worth the effort.

### 4.2.4 Determine Third Player Goals and Strategies

The area of third player goals and strategies clearly received the least attention of all of the analytic functions. To some extent, this was understandable, given the bipolar nature of the competition assumed in the DoD Competitive Strategies Initiative, and given the specifics of the Competitive Strategies Council's mission and guidance to the task forces and to the War Game Committee. Still, there were occasions when a greater concern for non-Soviet players was in order.

Task Force II failed in their attempt to handle this requirement through contractor-supported competition planning gaming and emulative analysis. They did, however, occasionally address third players in the course of their deliberations. Task Force I's global, multi-theater team attempted to deal with this question through contingency analysis based on logic, expert judgment, off-the-shelf regional political-military analyses, and the results of previous gaming.

The key point, however, is that this was a very weak area in general throughout the course of the work on competitive strategies. If the initiative is revived in the DoD, a special effort will be needed to make major improvements in this area, particularly in light of the increase in the number of potentially important players in the future security environment.

### 4.2.5 Determine the Impact of U.S. Actions on Soviet Weapons and Doctrine

Task Force II devoted a great deal of time and effort in attempting to determine the impact of U.S. actions on Soviet weapons acquisition and doctrine. The reason was that the acquisition aspect of this particular analytic function was at the heart of one of their four proposed strategic initiatives and was at least related to the other three. Task Force II went so far as to consult on the matter with the Army's Foreign Science Technology Center in Charlottesville, Virginia. Perhaps the best results, however, were obtained by the War Game Committee. They contracted with Booz-Allen and Hamilton to have a "red team" made up of experienced Sovietologists examine both the acquisition and operational dimensions in the context of the recommendations made by Task Force I. The game was viewed by many of the participants and by the War Game Committee as having been quite useful. Task Force I and the War Game Committee explored the issue at some length from a doctrinal and operational perspective, making use of military contingency analyses supported by logic and expert judgment. The Senior Intelligence Committee devoted considerable effort to examining this set of issues as part of their formal reviews of the work of the two task forces.

### 4.2.6 Set Goals for the Competition

Both theoretically and methodologically, the analytic requirement to set goals for the competition had much in common with the first one -- the need to evaluate changes in the competitive environment -- in the sense that the task forces and war gamers and modelers were asked to accomplish their planning and analysis tasks in the absence of an agreed overarching analytic and strategic context. Just as there was no survey of the competitive environment (layer 1 in the hierarchical planning approach discussed in Chapter 3) available to assist these analysts in forecasting the relevant aspects of the future security environment, there was no approved high-level strategic plan (layer 2 of the hierarchy) already in being to help guide them. The reason was that neither the National Security Council nor the Secretary of Defense, the logical architects, had as yet created such a plan.

Some believed that, over time, as various task forces and supporting gamers and analysts reported the results of their work to the Competitive Strategies Steering Group and Council; as the Joint Staff, the CINCs, and the Services became more fully engaged in the competitive strategies process; and as decisions were taken along the way by senior defense executives, such a plan would evolve in the department, if not at the national level. Perhaps; but it did not even begin to happen during the time that competitive strategies planning and analysis was done within the DoD.

Such goals as were established for the military competition were set for the subareas and associated implementing program areas (layers 3 and 4 of the hierarchy). Those involved in gaming and modeling, in particular, simply could not do their work without establishing some kind of goals and standards against which to gauge the relative effectiveness of the various strategy initiatives proposed by the task forces. Logic and expert judgment were employed to begin the process of setting goals. Adjustments were then made based on results derived from combat modeling at different levels.

### 4.2.7 Identify Likely Soviet and Third Player Moves and Countermoves

As noted in Section 4.2.4, third players received little attention from the task force members and gamers alike. The Soviets, in contrast, were the central focus of everyone's efforts. That said, the quality of this attention often left much to be desired.

The basic competitive strategies methodology envisions a multi-move sequence of U.S. actions, Soviet responses, and U.S. counter-responses, as discussed in Chapter 1. It is important to think completely through at least three moves before recommending action on the first one. The reason is that, what appears, at first, to be a good idea may, after careful consideration of what the other side might do in response, turn out to be less desirable than originally imagined. The U.S. decision to MIRV its ICBMs readily comes to mind in this regard.

Task Force I spent the majority of its time establishing work procedures (they truly were pioneers in competitive strategies), getting read into its competition planning problem, and developing its ideas for the first move in the three-move competitive strategies planning sequence. The ninety days originally allotted for them to do their job

lapsed quickly. As a consequence, little time was left at the end to think through Soviet and third player responses, much less U.S. counter-responses. In reality, then, their actual planning horizon was closer to five years than to the desired fifteen years or more. Task Force II had planned to have a contractor-supported red team assist them with this task, but, as already mentioned, was unsuccessful in obtaining the needed funding. They did, however, consult informally with SAIC's Foreign Systems Research Center (FSRC) in Denver. Such Soviet-style thinking or other emulative analysis as was accomplished by the task forces, then, was largely performed by members of the intelligence working group assigned to assist the task forces or based on logic, expert judgment, and existing regional political-military analyses. If only because time ran out, the quality of this work, in the large, was not what it should have been -- or, for that matter, could have been.

The War Game Committee had at its disposal members of OSD, the Joint Staff, the Services, the intelligence community, and contractor personnel who were generally well qualified to ensure that a Soviet-style perspective, if not necessarily that of third parties, received its due in their work. Moreover, as discussed in Chapter 2 of this report, Phase II of the plan for follow-on gaming and simulation modeling made explicit provision for determining the possible effects of Soviet countermeasures on U.S. plans and systems. As in the case of determining the impact of U.S. actions on Soviet weapons and doctrine (Section 4.2.5), the Senior Intelligence Committee's formal reviews of the work of the two task forces gave careful attention to this analysis function .

### 4.2.8 Evaluate Alternative Strategies for the Military Competition

As almost anyone who has participated in a military education program at any level can attest, military officers and their attending civilian counterparts are usually thoroughly instructed and exercised in the fine points of how to make a formal estimate of the situation, including how to develop and analyze alternative courses of action for military plans and strategies at all levels. Nonetheless, many, if not most, of these students, both while attending school and later when back on the job, often show remarkably little imagination when performing this most basic of planning functions. So it was with competitive strategies.

Done well, the selection and evaluation of alternative strategies begins with a deliberate attempt to brainstorm, identify, and record distinctly different approaches to accomplishing the same clearly defined ends. One could be charitable and say that, in the course of their extensive deliberations, the task forces did identify competing ways of solving their planning problems, and then selected or rejected ideas for strategies on the merits. Those that survived became the recommended strategies. In reality, what generally happened was what Service school instructors regularly witness. The task forces went about the business of exploring alternatives in, at best, a perfunctory way. Sooner or later (and usually sooner), they settled on what would become the only ideas they would seriously entertain -- ideas that then would be further examined, honed, and refined over a relatively long period of time (in relation to the total time available to the task forces) for presentation as their final recommendations. It was in this fashion, then, that the recommended strategies generally were created. But were they always "true strategies"?

In the military sphere, strategy is commonly considered as involving a process whereby goals or objectives, on the one hand, are linked with capabilities or resources, on the other, by means of strategic or operational-strategic concepts of operation. The very essence of a true strategy, and the value it imparts to planning, then, lies in the way it answers the question: "How?". In this fundamental sense, Task Force I did a much better job of crafting strategies than did Task Force II.

In part because of the nature of their competition planning problem, and in part because of the makeup of their group, Task Force II's overall approach to developing strategy was more thoughtful, sophisticated, and deliberate than was Task Force I's. Task Force II identified what it viewed as the range of resources and other enabling means for accomplishing various strategic goals. But Task Force II fell well short of the mark in proposing particular plans or concepts for actually doing what they said had to be done in order to achieve their stated ends.

At a minimum, and whatever else they decide to do with the time available to them, competitive strategies task forces should be expected to include in their formal recommendations at least a first approximation of an answer to the "how" question. This critical task should not be left, by default, to gamers or other follow-on analysts. The first

responsibility of this group should involve assessing the feasibility of the concepts proposed by the task forces. They should, however, be free to propose alternative strategies of their own, based on the results of their analyses. In some cases, the War Game Committee and the analysts involved in the follow-on work did just that.

Another point regarding the evaluation of alternative strategies involves the use of scenario-based contingency analysis to facilitate this part of the competition planning process. The early history of systems analysis in the DoD under Secretary Robert McNamara was replete with examples of the uses and abuses of scenario-based analysis in defense management and resource allocation decisionmaking. Scenarios do, however, have a potentially important role to play in defense analysis, generally, and particularly in competition planning. With respect to the DoD Competitive Strategies Initiative, two specific examples merit mentioning.

The first involved the concept of "global war." For some purposes, the general notion has a certain utility. Indeed, both task forces made reference to it on many occasions. But its usage often tended to obfuscate, rather than illuminate, serious planning issues. To be useful to planners, analysts, and policymakers alike, the concept needs to be explicated in sufficient detail to be rendered analytically tractable to those charged with giving it operational and programmatic meaning. Task Force I, in particular, initially was reluctant to explain what it meant by global war. The problems that the task force's subgroup on global and multi-theater operations had to contend with, discussed in Section 4.2.3, were at least partly related to this issue. In short, they were directed to describe global war operationally, plan for the employment of various force packages, and then analyze the implications for their proposed strategy.

The second instance of note regarding scenario-based contingency analysis involved Task Force II. One of the difficulties identified by several reviewers of Task Force II's strategy for holding the Soviet homeland at risk was the way the discussion of the proposed strategy lumped together a variety of contingencies (e.g., the U.S. alone, or assisted by others, versus the Soviets; the Soviets versus the U.S., either alone or with others -- and both with and without inclusion of homeland attacks; the U.S. alone or with others versus non-Soviet third parties, including Third World nations, etc.). These

scenarios are qualitatively quite different -- to the extent that they require some elaboration in order to show just how they are different from, as well as related to, each other and to other possible matchups. This is important from a strategic planning perspective because the issue of the relative availability and fungibility of forces and other resources across a range of contingencies has been and will remain a major issue in U.S. force planning and associated programming and budgeting.

One final set of observations under the heading of evaluating alternative strategies involves the approach to this competitive strategies analytic function taken by the Joint Staff, and highlights the often critical importance of operational concepts as components of competitive strategies. As discussed in Chapter 2, the Joint Staff formally evaluated the work of Task Force I and the War Game Committee in its own follow-on analyses. In February, 1989, the Joint Staff submitted an interim report entitled, "Analysis of Competitive Strategies as a Military Option."[1] The report noted that what the War Game Committee had done was "generally supportable." It went on to comment that "many of the operational employment concepts were used only in the competitive strategies applications and not in the TF I War Game Committee baseline analysis."[2]

This observation, although correct, was revealing. Task Force I had developed a set of operational concepts for prosecuting war in the European Central Region that were, in some important ways, different from then-existing plans in the theater and related concepts used by the Joint Staff in its own gaming work. By definition, then, the task force's proposals were not part of the current set of officially approved operational concepts. Also by definition, the concepts of operations were examples of what the basic competitive strategies concept, discussed in Chapter 1, refers to as a "new or improved military capabilities." That being the case, they were not suitable for use in the base case developed by the War Game Committee. The base case should have been, and was, comprised of the existing set of forces and operational concepts. The operational concepts and mix of systems and technologies proposed by Task Force I were treated by the War Game Committee as variants or alternative cases to compare against the base case in determining whether, and then to what extent, the proposed competitive strategies might be expected to make a difference in the future.

The importance of operational concepts in competitive strategies was made clear in the words of the Joint Staff assessment itself:

> Innovative employment concepts, when used only in the competitive strategies applications, tend to overstate the difference between the baseline and competitive strategies results and make it more difficult to isolate the relative contribution made by the enabling system.[3]

From a technical point of view, the Joint Staff was correct. By gaming the new concepts and the new mix of systems at the same time, the War Game Committee had made it impossible to assess the relative contribution of each component independently. But the larger strategic point was that the Joint Staff had suggested what some already had suspected but could not prove: namely, that the new operational concepts developed by Task Force I, used in conjunction with *existing* systems, were capable by themselves of making a difference, and perhaps a significant difference, in likely conflict outcomes, as determined by the gaming and computer simulation modeling.

But the concern expressed by the Joint Staff with regard to operational concepts was more than just technical in nature. At the very least, it reflected perhaps a basic misunderstanding of the core concept of competitive strategies itself. At worst, it was a bureaucratic reaction to a perceived threat to their traditional role in military strategic planning in the DoD. In any event, a disconnect concerning the role of operational concepts in competition planning is clearly evident in the November 30, 1988 memorandum from Deputy Secretary Taft to the chairman of the Competitive Strategies Steering Group, discussed in Chapter 2. The appropriate passage reads as follows: "Before we submit our SAPs [special access programs] to War Gaming with Task Force I Competitive Strategies we must ensure that the war game accurately reflects *current* [italics added] war planning assumptions and campaign strategies."[4]

In fact, the entire Competitive Strategies Initiative, from its inception, was intended as an effort to eschew conventional thinking, look well beyond current policies and plans into the future, and seek, through various combinations of new operational concepts, doctrine, organizations, weapons, and technologies, to create new and improved military capabilities capable of contributing to the conduct of an effective competition

against the Soviets two decades or more removed from the present. However valid and useful current planning assumptions and campaign strategies might be today, and acknowledging the importance of having an agreed set for use in planning and analysis in support of the JSPS and PPBS, they may have little relevance for planning for the long-term future. The critical point is that competitive strategies planners and analysts must be free to look beyond today's givens to other, different ideas.

### 4.2.9 Evaluate Portfolio Management Alternatives

As discussed in Chapter 3, portfolio management is a set of planning techniques designed to limit or control the risks inherent in any one or more strategies or actions within a subarea of the competition or across several subareas. These techniques should also make it easier for the United States to exploit new opportunities for realizing competitive advantages when they appear. Examples include multiple, partially overlapping, competitive goals and building into U.S. strategies and actions the ability to adapt readily to Soviet actions or other changes in the competitive environment.

Portfolio management, as a function of competition planning, proved elusive, both conceptually as well as practically, to most of those involved in competitive strategies in the DoD. Table 5 shows that all four groups of analysts at least attempted to meet this planning requirement. As suggested earlier, the global, multi-theater subgroup in Task Force I engaged in this kind of thinking, but only after being directed to do so and then report their results in writing. Task Force II, whose members tended to be more cautious and theoretically inclined than those in Task force I, explored the risk component of portfolio management in their work. Beyond, but related to that, they included in their report a very informative and useful section on arms control as it pertained to their strategy recommendations. The lesson provided by Task Force II was that arms control should be a major consideration in any competitive strategies analysis.

Arguably, the gamers and modelers did the best job with portfolio analysis. But that was true only insofar as they tried hard to build flexibility into the operational concepts and force packages they were working with, and if only because they always were operating in a truly interactive mode, where opposing forces constantly were striving

for competitive advantage -- one of the essentials, as well as one of the key benefits, of two-sided analysis, whether made possible through competition planning games, some form of contingency analysis, or modeling.

It may be argued that portfolio management would have occurred naturally in the Competitive Strategies Steering Group and Council, as ideas for new strategies accumulated and people became more comfortable with the whole notion of competitive strategies. Perhaps it would have; but, as with the task of developing distinctly different alternative strategies, discussed earlier, many Service school instructors and other students of military culture likely would observe that neither the ability nor the propensity to engage in thoughtful risk analysis come naturally, at least not to many American military officers. As in the case of Task Force I, once they have, after perhaps intense deliberation, decided on a course of action, they generally are strongly averse to questioning their original wisdom. Should competitive strategies ever be reinstituted in the DoD, it will be important to deliberately build into the system a mechanism for ensuring that this critical requirement is met.

## 4.3 USE OF ANALYSIS TOOLS

The previous section discussed Table 5 from the perspective of how those involved in the selected major competitive strategies analyses in the DoD met the analytic requirements of competition planning. This section briefly summarizes how the various tools of analysis were employed across the analytic functions.

### 4.3.1 Overall Assessment

Looking at the four primary analytic tools capable of supporting competition planning and analysis, one is struck by how infrequently they were employed. Among the four, military contingency analysis was used the most, if one considers both its formal and informal, or "back-of-the-envelope," variations. Even here, however, it was not used much in the areas where it was capable of making its greatest contribution, that of setting goals for the military competition, evaluating alternative strategies, and evaluating portfolio management alternatives.

Emulative analysis, especially Soviet-style analysis, is central to competitive strategies, particularly as it was practiced from 1987 to 1989. As discussed earlier, however, it was used sparingly, at least in the formal sense. The same was true of competition planning games, although one might argue that the task forces themselves conducted what amounted to one continuing, if usually unstructured, planning game. Still, Task Force II saw utility in requesting, albeit unsuccessfully, contract support to run just such a game for them, one that would include a rich "red team" component.

Military balance assessments fell somewhere in the middle. They were used, occasionally even deliberately, but did not contribute as much as one might have thought. Predictably, they were employed most often in diagnosing the current state of the competition in the context of the work done on Europe by Task Force I, the War Game Committee, and the follow-on analysts. Part of the reason that Task force II did not make greater use of military balance assessments in their work was that a formal, stand-alone balance assessment pertaining to non-nuclear strategic capabilities (NNSC) did not exist. In dealing with balance-related issues, they were able to draw on the results of earlier studies, such as the 1987 Defense Science Board Summer Study on NNSC, but these did not completely meet their needs. This would seem to argue that, for those who make military balance assessments their stock in trade, consideration should be given to undertaking specific work in this area, especially in light of the rapidly changing nature of the military technology component of the global security environment.

Looking beyond the four principal tools, gaming and modeling of various kinds and at all levels was drawn upon, from individual systems to theater-wide and even global campaigning, both off-the-shelf and that accomplished specifically in support of competitive strategies. Without question, had the follow-on analysis continued, more and different kinds of gaming and simulation modeling would have done.

As one perhaps might have guessed, logic, expert judgment, and off-the-shelf regional political-military analyses clearly dominated the deliberations of the task forces. The gamers and modelers also made extensive use of these techniques. Such forecasting as was done relied heavily on these techniques, as well. The conclusions

presented in Chapter 3 regarding the limited utility of strategic planning tools for businesses for contributing to military competition planning were borne out in practice. It appeared that, at no time, were these techniques employed by the members of the task forces or by the gamers or modelers.

In closing this chapter, it is perhaps useful to make some additional observations on gaming and simulation, in general, and the use of measures of effectiveness, in particular. They will be treated in reverse order.

### 4.3.2 Measures of Effectiveness

Drawing on the discussion in Chapter 2 of the problems of trying to game black systems as part of the competitive strategies process in the DoD, it was noted in Chapter 3 that there has been a continuing and growing problem in identifying measures of effectiveness adequate to capture and then understand the real effects of both current and future defense systems, including firepower producing systems as well as the systems that support them, most notable C3I. The ability to isolate and assess adequately the effects of the existence, enhancement, or degradation of "systems of (these) systems" has been even more elusive. As it turned out, a number of strategy initiatives, especially those proposed by Task Force I, emphasized combinations of advanced technology weapons systems and modern ground- and space-based C3I, all combined into intricate systems of systems. Needless to say, the War Game Committee was unable to contribute very much to the understanding of these ideas.

But the problem of selecting and using analytic measures in competition planning and analysis goes well beyond the assessment of systems, whether individually or in combination, to the ability to determine whether, and then to what extent, a given competitive strategy, or an entire portfolio of strategies, is successful -- and not just at the point of termination but at key junctures along the way, which may involve years of observation and analysis. This has major implications for competitive strategies, and especially for the concept of portfolio management. It seems clear, then, that the subject of MOEs merits both more careful attention and much greater research interest.[5]

In an unusually thoughtful and well crafted paper, James Roche and Barry Watts of the Northrop Corporation's Analysis Center in Arlington, Virginia, note that the choice of measures has been a first-order problem since the earliest days of military modeling, operations research, and systems analysis.[6] Analysts today have access to a broad array of analytic tools, including MOEs but, as these authors point out, if such tools are routinely pulled off the shelf and applied without giving much thought to their appropriateness, analysis runs the danger of becoming more and more divorced from reality.

The defense analytic community seems strongly inclined to quantify almost everything. Not infrequently, this occurs to the extent that it becomes a substitute for thinking and seems often to disregard history and even current experience. There are decided limits to quantification. Also, the historical evolution of military technology and other changes make clear that analytic measures of all kinds are potentially perishable. In addition, the most obvious and readily quantifiable measures may not necessarily be the right ones at all. Moreover, there are decided limits to the utility of looking just at immediate consequences of military actions. Qualitative criteria -- among them second-order consequences, virtual attrition, holding targets at risk, and the like -- need to be considered in order to help make wiser choices of measures in the future as a critical first step in the process of developing a more meaningful understanding of the total effects of different kinds of military actions.

In 1967, James Schlesinger observed that "adequate measures of merit have yet to be devised" for "most higher-order problems."[7] Little has changed in the last quarter century. The proper execution of a program of competitive strategies planning and analysis involves a strong focus on the examination of higher-order problems. The problem presented to Task Force II, that of exploring the possibilities presented by U.S. non-nuclear strategic capabilities, was of this genre. There is little question but that the task force's inability to come to grips analytically with the notion of what it takes to deter, which was central to their analysis as they structured it, was largely due to a lack of appropriate measures. As Roche and Watts point out, "the probability of arrival of a weapon at its target in a given scenario can be given a numerical value easily enough, but quantifying the weapon's overall strategic utility across a range of divergent scenarios is something else again. The toughest problems of strategic choice, 'dominated as they are by uncertainties and by differences in goals,' have simply not yielded to systems analysis and 'analytic'

approaches."[8] Actual strategic choices in actual situations can involve higher-level considerations that go well beyond anything we can credibly quantify.[9] The reason lies in "the essential nonlinearities" of other than direct effects.[10] Higher-level considerations, like holding targets at risk, are non-linear and thus inherently resistant to exact quantification.[11]

Almost all of the quantitative measures and models we currently possess were developed within a bipolar world in which the Soviets and their allies provided a well-defined, reliable threat. Further, they have been optimized to analyze near-term combat outcomes or effects, not the long-term consequences of alternative decisions. To the extent that the traditional tools and techniques of defense analysis need to be adapted to take better account of a more multipolar environment and a longer-term planning horizon, all of which is further complicated by the accelerating pace of the diffusion of the results of technological innovation, it needs to move beyond traditional quantitative measures and into the world of nonlinear qualitative measures. Clearly, this is much easier said than done, but this is the challenge that faces the defense analytic community today.

Table 6, from the work of Roche and Watts, contains a rich list of analytic measures. Those shown in regular type are quantitative measures. The italicized entries are more qualitative in nature and tend to be the more important ones for thinking about higher-order strategic choices and overall outcomes. Those who might wish to advance the state of the analytic art in competitive strategies analysis might well contemplate this list early in their work.

### 4.3.3 Gaming and Simulation

In the entire field of defense analysis, perhaps nothing is easier to find fault with, and nothing serves better to allow some people to show how "smart" they are at someone else's expense, than the results of someone else's computer-based modeling or simulation analysis. The Competitive Strategies War Game Committee did a good job in accomplishing their assigned tasks under difficult conditions. That they fell short of the mark in some ways was to be expected, under the circumstances. Several written technical

**Table 6. Selected Analytic Measures**

| | |
|---|---|
| Force Ratio | Surviving Warheads |
| Red vs. Blue Attrition | *Deterrence* |
| Effectiveness as Artillery | Production Bottlenecks |
| Maintainability | *Vital Target Systems* |
| Target Destruction | Bomb Tonnage vs. Production Indices |
| Target Damage | Pilot Attrition |
| Merchant Losses to Subs | *Pilot Quality* |
| Search/Sweep Rates | *Autonomy as a Separate Service* |
| Kill/Loss Ratios | *Indirect Production Losses* |
| WEI/WUV Scores | *Distorted Resource Allocations* |
| ADE Ratios | *Air Superiority* |
| Rate of Advance | *Second-Order Consequences* |
| FEBA/FLOT Movement | *Indirect Effects on Enemy Morale* |
| Cost | *Impact on Enemy Thinking* |
| Cost Effectiveness | *Virtual Attrition* |
| *Opportunity Costs* | *Induced Strategic Mistakes* |
| Throw Weight | *Holding Targets at Risk* |
| Equivalent Megatonnage | *Higher-Level Effects* |

Source: James G. Roche and Barry D. Watts, "Choosing Analytic Measures," draft, July 3, 1990

critiques of their work (including one prepared by the author of this report), comprising scores of pages, serve to explain most of the shortcoming in considerable detail.[12] As discussed earlier, however, few of the major criticisms leveled came as a surprise to the members of the committee. From the moment they submitted their required report, they began to develop ideas for refining and extending their work.

The most common criticisms of the committee's product long have accrued to many, if not most, similar analyses. To single out the report of the War Game Committee, then, for special criticism, was, at the very least, somewhat unfair. Moreover, in some ways, the committee was held to a higher standard than is applied to much of what passes for serious analysis using computerized models and simulations of combat. Certainly, the results of their work received much wider distribution and much closer

scrutiny in the DoD than any comparable program of analysis in recent memory.

There is a large measure of truth in the saying that the best disinfectant is lots of fresh air and sunshine. Let it be said, then, that the final report of the War Game Committee is unlikely to cause anyone any serious harm in the future. Perhaps more of the gaming, modeling, and simulation work done outside the Office of the Secretary of Defense in the DoD would benefit from the same kind of exposure to this natural treatment. All too often, the Secretary of Defense and his staff are informed of selected results of selected analyses of selected issues without the benefit of being able to review the substance of the work, beginning with first principles.

## ENDNOTES TO CHAPTER 4

1. Joint Chiefs of Staff Memorandum (JCSM) 42-89, "Competitive Strategies -- Interim Report (U)," March 17, 1989. (S/NF)

2. Ibid., p. II-7.

3. Ibid.

4. William H. Taft, IV, "Competitive Strategies," memorandum to Chairman, Competitive Strategies Steering Committee [*sic*], p. 1.

5. The problems associated with the selection and use of measures of effectiveness in competitive strategies planning and analysis are discussed in Michael C. Vitale, "Analysis of the Competitive Strategies Methodology (U)" (Thesis, Naval Postgraduate School, Monterey, CA, December 1989), beginning p. 129. (S/NF/WN)

6. James G. Roche and Barry D. Watts, "Choosing Analytic Measures," draft, July 3, 1990.

7. Ibid., p. 9.

8. Ibid., citing James R. Schlesinger, "Uses and Abuses of Analysis," *Selected Papers on National Security 1964-1968* (Santa Monica: RAND Corporation paper P-5284, September 1974), p. 114.

9. Ibid., p. 25.

10. Ibid., p. 33.

11. Ibid., p. 34.

12. See the following for critiques of the report of the Competitive Strategies War Game Committee: David J. Andre, "Review of CS Wargame Committee Report," memorandum for Chairman, Competitive Strategies Steering Group dated September 1, 1988; Joint Chiefs of Staff, "Analysis of Competitive Strategies Task Force I,"

Final Report, December 1989 (S/NF); United States General Accounting Office, Report to the Honorable Andy Ireland, House of Representatives, "(U) Military Strategy: Computer Simulations Did Not Clearly Validate Competitive Strategies," April 16, 1990 (S); and Leonard Sullivan, Jr., letter to Dr. Milton Lohr, Principal Deputy USD(A), October 24, 1988. Mr. Sullivan, a former defense official, was a member of the Defense Science Board Task Force on Competitive Strategies. His is the briefest and most incisive of all of the critiques.

# 5. LESSONS LEARNED/CONCLUSIONS AND RECOMMENDATIONS

This volume, the report of Phase I of a planned three-phase program of research and analysis, does the following:

- Reviews the history of the DoD Competitive Strategies Initiative, including the basic concept and methodology, as well as the organizational structure and management system adopted.
- Outlines existing applications of the competitive strategies methodology to defense planning.
- Discusses the analytic functions or requirements that analysis must be able to carry out in order to support competition planning.
- Identifies and assesses the analytic tools, techniques, and measures of merit currently available to assist this process, including their relative strengths and weaknesses.
- Evaluates the major existing applications of competitive strategies planning and analysis based on the way various analytic tools were applied in addressing the analytic functions or requirements.

This final chapter distills lessons learned/conclusions from the DoD experience with competitive strategies and makes recommendations for application in later phases of the present SAIC program of work. Aside from those observations that are specific to the DoD, anyone who has ever read a basic primer on long-range strategic planning will find little that is new here. As with the concept of competitive strategies itself, what matters the most in this business is less "new" than "true."[1]

## 5.1 LESSONS LEARNED/CONCLUSIONS

Considerable detail has been provided on various aspects of the DoD Competitive Strategies Initiative addressed in this report. The key lessons learned are summarized under the following major headings:

- First Principles
- Political/Bureaucratic Considerations
- Organization
- Management
- People
- Analysis Methods and Tools
- Planning for the Long-Term Competition
- Specific Accomplishments

### 5.1.1 First Principles

- The role of the Secretary of Defense is critical to the conduct of a competition planning and analysis activity in the DoD. Without his clear personal support, it cannot succeed; even with his support, there are many reasons why its success cannot be guaranteed.

- Only the Secretary of Defense can determine whether, and then to what extent, competitive strategies will continue to contribute to serious long-range competition planning in the DoD. In making this judgment, competitive strategies should be viewed as a complement -- a logical adjunct -- to the PPBS and JSPS, rather than as a competitor or substitute for these more traditional planning and management systems.

- The DoD has been roundly criticized from many quarters over the years for assorted fundamental failures in the realm of strategic planning. Without intending to diminish the value of the PPBS and the JSPS in other areas, in the absence of competitive strategies there is nothing now organizationally imbedded in the DoD that produces, in writing and as a consequence of the deliberation of a broad array of planners, analysts, and senior defense executives, both civilian and military, the results of a serious, ongoing, long-range strategic competition planning effort in the department. For all of the shortcomings in strategic planning commonly ascribed to the military, the Joint Staff in particular, the contribution of the civilian side of the DoD is especially wanting in this regard.

- Should it be decided to proceed with competitive strategies, it will be necessary to adapt the original approach to better accommodate ongoing and expected future change in the global security environment, including

taking better account of non-Soviet competitors and third parties and perhaps even reconsidering the very definition of what it means to compete.

- It is always difficult to change the way an organization, especially a large organization, does its business internally. The challenges and obstacles that competitive strategies often had to contend with in the DoD, then, were seldom unique. However, at bottom, it is important to understand that the institutionalization of an effective competition planning activity in the department requires a willingness to undertake a long-term effort aimed at bringing about nothing short of a fundamental cultural change within the institution. This is not easy to do. But it requires a willingness to at least try. However the process of managing such an important change proceeds, it must begin with an understanding of competitive strategies as a particular method of systematic strategic thought, one that, in many ways, is quite different from -- and thus logically complements, rather than competes with -- the DoD PPBS and the Joint Staff's JSPS. These basic ideas were developed more fully in Section 1.2

### 5.1.2 Political/Bureaucratic Considerations

- Overall authority over the DoD Competitive Strategies Initiative should be vested in the Secretary of Defense, the chief executive and top decisionmaker in the DoD. It should be his personal tool for planning and managing the long-term military competition from a department-level perspective, and clearly be viewed as such by the department.

- Other departments and agencies within the DoD, such as the Joint Staff, the military Services, and others, should conduct their own comparable competition planning and analysis activities. The results can then be integrated, as appropriate, into the larger DoD program.

- For reasons both bureaucratic and substantive in nature, regardless of whether they establish and manage their own such activities, the Joint Staff; the Services; the policy, acquisition, and intelligence communities; and others in the DoD should participate in the Secretary's program of competitive strategies as equals in an open forum, much as they did between 1986 and 1989.

- The CINCs can and should play a greater role in competitive strategies. The very high quality of the input received from the CINCs, particularly USCINCEUR, and the unique perspective they offer, argues compellingly for ensuring that they are afforded ample opportunity to participate.

- Notwithstanding the preceding two points, given the traditional nature of the relationships between the various major components of the DoD, the involvement of extra-OSD DoD organizations in the Secretary's competitive strategies activity is no guarantee that normal concerns and tensions can be eliminated, or even significantly reduced, from what they have been. They should not, however, be permitted to interfere with the conduct of serious department-level competition planning, analysis, and decisionmaking, as happened in the past.

- Beyond such formal relationships as might be established to manage competitive strategies, the Secretary of Defense should, as opportunities arise, consult privately with the chairman of the Joint Chiefs of Staff, the civilian and military heads of the military departments, the CINCs, and other senior DoD leaders and staff on the conduct of the long-term military competition. The results of these interactions can be integrated, as appropriate, into the larger competitive strategies process, with due regard for their sensitivity. There is specific and rewarding precedent for this kind of more personal consultation between the Secretary and key subordinates.

- One final observation provides a transition between the present section and the next. Those involved in competition planning must be able to answer the "What's in it for me?" question. Everyone must see some advantage for them and their organization or something worthwhile in doing competition planning. In the past, all too often, too many people saw too many potential liabilities to their involvement, or even to the continued viability of the competitive strategies process itself. The most important person who needs to be convinced, of course, is the Secretary of Defense. In the final analysis, he is the one responsible for setting the future course for the department and for the competition; even more fundamentally, he is the one responsible for deciding if the DoD is to participate deliberately in the military competition at all. (Implicit in this

last comment is the assumption of an ongoing and continuing military competition; it remains for the DoD to acknowledge it explicitly and plan accordingly.) Only by providing the Secretary with ideas, insights, and alternatives that both interest him and afford him some practical means of helping set institutional objectives and influencing its future will he become convinced of the need for competition planning.

### 5.1.3 Organization

- Institutionalization of an activity such as competitive strategies is essential. Ad hoc efforts are fine, as far as they go; indeed, they can contribute in special ways, including encouraging creativity and innovation. However, the ad hoc approach is no substitute for an institutionalized planning process. Lacking institutionalization, including a dedicated set of organizations, a regular program of meetings, and the like, too much is left to chance and opportunities are all too easily missed.

- As noted earlier, the quality of the people involved (their experience, professionalism, competence, etc.) is a critical consideration in planning for the success of a competition planning program. However, perhaps what matters at least as much is the way they are organized and led.

- There are many possible ways of organizing to do competition planning in the DoD. The organization actually adopted (refer to Figure 1) was adequate to the task. Whatever approach is taken, it should involve as few layers of organizational hierarchy as possible and carry the imprimatur of the Secretary of Defense.

- The office that has responsibility for managing the day-to-day conduct of competitive strategies activity, formerly the Competitive Strategies Office (CSO), must have the support of and direct access to the Secretary of Defense. Desirably, it should be located in the immediate office of the Secretary, as was the case from its inception in mid-1987 until the change of administrations in early 1989. As noted earlier, however, owing to a variety of substantive, analytic, and political/bureaucratic obstacles, such backing and proximity is no guarantee of success. But lacking this kind of relationship, there is virtually no chance of success. As a practical matter, competition

planners need the viewpoint, visibility, implied authority, and protection that only the Secretary can provide.

- If it is decided, nonetheless, to have the CSO report to someone lower in the bureaucracy, it still must have access to the Secretary on a regular basis. Their immediate superior, in this arrangement, must resist the temptation to dilute or deflect the ideas developed by the Competitive Strategies Office, the task forces, and others involved in pushing what others commonly define as the limits of the possible. Coordinated activities have their place in the DoD. However, when it comes to competition planning, full coordination, Pentagon-style, virtually can be guaranteed to lead to unexceptional, even sterile, ideas that are of little or no interest or value to the Secretary.

- The CSO was generally well organized and staffed to play their important role. However, they never received any permanent billets to give needed stature and stability to their operation and they lacked a full-time representative from the Marine Corps. Their location, in a former conference room on the ground floor of the Pentagon, implied a temporary status and questionable importance, and otherwise interfered with their ability to interact easily and effectively with other key participants in competitive strategies.

- The task force should continue to be the principal vehicle for investigating particular competition planning problems. Although this approach was not without its shortcomings, no one (including the Defense Science Board Task Force on Competitive Strategies, who addressed the matter directly) was able to suggest a workable alternative. In the words of one observer, "CS should not be held hostage to the results of the deliberations of a task force." With this in mind, consideration should be given to having multiple task forces meet simultaneously to investigate different issues. This would help increase direct involvement and thus direct interest in competitive strategies by a larger number of DoD players. Involvement and interest also can be enhanced by, for example, having more senior people (e.g., officials at the deputy assistant secretary level) occasionally sit as members of a task force.

- There is, however, a direct connection between the number of task forces and other major activities in progress at any given time and the ability of the CSO to support them adequately. By late 1988, the combination of conducting normal administrative business, supporting the War Game Committee and Task Force II, and planning for follow-on analysis and Task Force III had stretched the CSO virtually to the limit of its capabilities.

- Formal task forces should not be the sole focus of long-range competition planning and analysis in the DoD. Others, including special teams in the Services, on the Joint Staff, in the combatant commands, in the military staff schools and senior Service colleges, and the like, should be involved, as well. The team formed by USCINCEUR that complemented and extended the work of Task Force I is a useful model.

- Task forces should continue to include representatives from the major organizations represented on the Competitive Strategies Council and Steering Group, or their successors. They should have within their ranks, or otherwise have ready access to, experts on military doctrine and operations, systems acquisition, and technology, both Red and Blue. A working understanding of joint and combined operations at the operational and strategic levels of war is important, as well, if it can be found (this point is discussed further in Section 5.1.5). The chairman of a task force should be someone who is familiar with the competitive strategies concept and methodology and who is experienced working in the Pentagon, especially with the Services, the Joint Staff, and key OSD offices. A seasoned colonel/captain (O6) is necessary, at a minimum. Consideration should be given to assigning general/flag officers as task force chairmen. A retired general or flag officer would offer the benefits of experience and stature while, at the same time, being better able to resist Service pressures than might be the case with an active duty officer.

- Task Force I, with fifteen members, was almost certainly too large. Task Force II's organization of nine members was closer to the optimum size. Having too many members leads to problems in the management of time, the flow of work, and the conduct of effective plenary discussions, and leads to the creation of uneven products, all too often submitted late. Having too few members results in a failure to

develop a critical mass of experience, knowledge, and insight and fails to provide for enough people to share an often heavy workload.

- Task forces need more than ninety days to do their work. Six months may be closer to the optimum. This will allow for time adequate to consider carefully the issues at hand and arrange for outside support for their deliberations, as needed. Whatever the decided duration of a task force's charter, it is useful to set a clearly defined termination date.

- The CSO should have a budget adequate to support a modest competition planning contract research program and provide funding for outside analytic assistance and perhaps some travel (to consult with experts, attend meetings, etc.) for the task forces.

- The Under Secretary of Defense for Acquisition should be encouraged to continue to sponsor bodies such as the Acquisition Panel and the Defense Science Board Task Force on Competitive Strategies. These groups made significant contributions to the DoD Competitive Strategies Initiative. Other department, office, and agency heads should be encouraged to sponsor similar bodies dedicated to supporting competition planning and analysis.

### 5.1.4 Management

- The Secretary of Defense and those responsible to him for competition planning, such as the chairman of the steering group, working with those charged with actually accomplishing or managing the planning, should establish clear goals for the overall competitive strategies activity, for each major phase of analysis (or for each problem set investigated), and for each key planned action that emerges from the process. It is equally important to specify the critical actions intended to achieve the goals.

- Senior defense executives should not expect either quick or frequent major results from competitive strategies. By analogy, competitive strategies is more akin to diamond mining than it is to coal mining. A coal miner fully expects to recover a large quantity of product each day. In contrast, a diamond miner may work for a very long time before discovering a true gem. But the result can be very much worth the wait.

Not every competitive strategies task force will produce a "gem-quality" product. Nor should they be expected to. This is all the more reason for encouraging others to emulate the work of the task forces in questing after high-leverage competitive strategies. Competitive strategies must be seen and valued as a process, not just as a creator of particular products.

- Notwithstanding the considerable time and effort devoted to competitive strategies planning and analysis by so many people, beginning with the Secretary of Defense, the Competitive Strategies Council never advised, and the Secretary never took, what could be construed as a decision that related directly to the long-term competition with the Soviet Union. Even useful deliberations by the steering group and council invariably led only to still more deliberations. A long-range planning process can be useful even if it does not lead to decisions in the present. One member of the council noted that he and his colleagues discussed expansively a number of issues of strategic importance for the United States as a consequence of competitive strategies that otherwise might have been handled in a less direct fashion, if at all. The wide-ranging, energetic exchange among the members of the council on Task Force I's global-maritime proposal is perhaps the best, but far from the only, example of this.

- Notwithstanding the time it takes to formulate and propose useful strategies, and notwithstanding the merits of discussion for the sake of discussion, it is essential that an occasional decision be made for early implementation of an idea relating to a long-range issue or long-range plan. For a competition planning activity to be perceived as doing more than just "blue-skying," or being more than just another bureaucratic staff function that finds it difficult to relate what it does to the organization's efficiency or effectiveness, it must clearly be seen to impact how strategic and operational decisions are taken and resources are allocated. Beyond that, it must, over time, be seen to make a positive difference for the organization, in this case the DoD.

- Even if competition planners come up with good ideas, and even if the Secretary and his advisors decide to take particular actions, it will not mean very much unless they can be implemented. A key aspect of competition planning, then, involves developing and executing

implementation plans and programs. It may even be said that implementation strategies are as important as the executive decision itself. Given that competitive strategies involves looking out a generation or more, it is difficult to keep people interested and focused and to avoid having things fall through the cracks. It is necessary, then, to devise systematic procedures for keeping things on track over the long term. The experience with competitive strategies in the DoD was that it proved difficult to do this even for the near term.

- By definition, planning in general, and planning for the long-term competition in particular, involves dealing with an uncertain future. For competition planning to matter, then, decisions -- perhaps major, risky decisions -- will have to be taken in the face of uncertainty, including a lack of important information. The alternative is paralysis through indecision. As discussed in Chapter 3, portfolio management techniques afford a means for at least somewhat hedging, if not entirely offsetting, the risks inherent in dealing with uncertainty.

- More and better ties between the DoD Competitive Strategies Initiative, on the one hand, and the PPBS and JSPS, on the other, are needed. In particular, there is a need to create better interface mechanisms between competitive strategies and the DoD programming and budgeting processes. In this regard, it is important to understand that competitive strategies, based as it is on developing a select portfolio of high leverage military capabilities, should have cause to impact DoD resource allocation only at the margin, to the extent that a particular initiative has any implications for resource allocation. All too often, people appeared to harbor an unwarranted fear that competitive strategies might upset the entire process of managing the development and execution of the defense program. The challenge for DoD senior executives is to create a balanced defense program that includes a meaningful increment of high leverage programs, as arrived at through competitive strategies planning and analysis.

- To conclude that something offers high leverage from a competitive strategies perspective is not to "pick winners," as some have charged. Competitive strategies does not endorse one capability over another. It only tries to identify potential "star performers" in terms of meeting specific, agreed goals for competing militarily over the long term. It is, as always, for the Defense Acquisition Board, the Defense Resources

Board, and the Secretary of Defense to make the calls.

- Responsible officials at every level should insist on adherence to high standards in competition planning and analytic work. The experience with competitive strategies in the DoD was that there was very little correlation between the amount and quality of the time spent reviewing, both formally and informally, task force products (various briefings, draft reports, etc.) and the evolution and final state of the quality of those products. Although many of the most fundamental analytical shortcomings were identified and highlighted early-on, in too many cases they persisted to the very end. At best, the vetting process involving the steering group chairman and his staff, the steering group itself, the CSO, and others was a missed opportunity. The council was far more effective in raising both important analytic and substantive issues than was the steering group. Indeed, the quality of the council sessions as vetting mechanisms tended to be very high. In contrast, some came to view the steering group as being, all too often, simply a bureaucratic hurdle to be overcome, rather than an opportunity for making substantive progress, on the way to the council .

- Overall, if experience is any teacher, neither the steering group nor the various DoD agency and military Service points of contact (the latter of whom were convened regularly by the CSO) can be expected to provide, by themselves, the kind of objective, penetrating review that competitive strategies products require. The real value of these bodies lies in other areas, such as providing a means for informing, being informed, and avoiding surprise. There is a need, then, to engage others periodically who can and will perform the essential quality control function. The Defense Science Board's Task Force on Competitive Strategies, along with councils of "wise men," both from within and outside of the department, were two approaches adopted to reasonably good effect. To the extent they fell short of expectation, it mainly was due to the failure of those responsible for creating various competitive strategies products to take advantage of the availed wisdom.

- There is an inherent tension in the process of quality control. A task force, for example, should have what amounts to academic freedom to question conventional wisdom and espouse all manner of contrary views. At the same time, there must be limits to "strategy-making by

assertion." The task forces produced as their major contribution what, as discussed in Chapter 3, amounted to analytic essays largely based on expert judgment. The essential methodology of the analytic essay, properly understood, involves the application of inductive and deductive logic to facts and judgments, often guided by expert insights and intuition, and the synthesis of the results into a coherent set of conclusions. The best of the analytic essays go beyond induction and deduction to formulate new perspectives on security issues, define new problems for consideration, synthesize conclusions, and propound policies. Expert judgment techniques should be used primarily to develop insights for analysis, not as a substitute for the analytic process. They should be drawn upon sparingly, focused as narrowly as possible on relatively uncomplicated questions, backed by explicit statements of the experts about why they reached certain judgments, subjected to critical review and debate, and tested against data and analysis wherever possible. Task forces, then, should be free to conclude and recommend as they will. But they also should be responsible for explaining their views, through reasoned, substantiated argumentation, much akin to standard peer review procedures in scholarly circles.

### 5.1.5 People

- The results of competition planning cannot be expected to exceed the limits imposed by the quality of the people involved. By its very nature, competitive strategies requires a significant investment in intellectual capital, at least in terms of quality. The most interesting (if not always the most practical and actionable) ideas typically come from those comfortable operating beyond the bounds of traditional thinking. When selecting planners and analysts to support competitive strategies, then, emphasis should be placed on qualities such as open-mindedness, independence of thought, imagination, creativity, and innovativeness. Few are so endowed; among those who are, fewer still are disposed to involve themselves in the competition planning process. As noted earlier, however, large numbers of planners and analysts are neither necessary nor desirable. This places a premium on careful selection and the achievement of some kind of disciplinary balance in the CSO, the task forces, and the like. The opportunity costs of making poor choices are potentially substantial.

- Competition planning must be responsive to the actions of a resourceful opponent. To be effective, then, competitive strategies work requires the availability of people capable of thinking, analyzing, and deciding like the opponent, and then tracking the opponent's actions over time. In the case of the DoD's USSR-oriented Competitive Strategies Initiative, it was difficult, even after more than four decades of contesting with the Soviets, to find enough people in the department skilled in Soviet-style analysis and informed about intelligence on the Soviets in ways relevant to the requirements of competition planning. The War Game Committee offset this in-house limitation by using a contractor-organized "red team" in its work.

- Too many people involved in the competitive strategies activity to this point have not been sufficiently qualified, by education, experience, or temperament, to investigate seriously, not to say efficiently and effectively, the set of military problems presented to them. For example, global conventional war centered in NATO Europe, the general area of investigation of Task Force I, is among the most thoroughly studied, well documented, and best understood sets of issues in the DoD. Still, the task force, whose membership included several people with relevant European experience, and who had access to other sources of applicable expertise, found their competition planning task to be a severe challenge. This is perhaps less a criticism of the individuals who have been involved in competitive strategies, mostly field grade military officers and comparable-level civilians with impressive professional records, than it is: (1) a reflection of the magnitude of the intellectual challenge posed by long-range competition planning and analysis, and (2) an indictment of the civilian and military systems that, over the years of their service, variously indoctrinated, trained, and educated them.

- American military officers typically are well schooled and otherwise informed and experienced with respect to the technical and tactical levels of war. This is, after all, what they have been involved with for most of their professional lives and the basis on which they have been advanced in their careers. But they often manifest deficits, sometimes significant deficits, in the breadth and depth of their knowledge of the strategic, and especially the operational, levels. So it was with many of those who participated in competitive strategies.

- Short of hand-picking future members of the CSO and the task forces, in particular the heads of these key organizations, there is no ready short-term solution to the problem of ensuring that the professional competence of the participants in the competitive strategies program is maintained at an acceptable level. Over the longer term, this problem can only be mitigated through some combination of improved Service school curricula, personal study and reflection on the part of the officers as individual professionals, and direct involvement in a well structured and managed program of competition planning and analysis.

- Whatever credentials, competences, and interests people may bring to the competitive strategies process, they can (and often did) grow professionally from the experience. No few of the working level planners and analysts became more "purple" or joint in their outlook; some even became staunch advocates of competitive strategies. As discussed earlier in several places, even senior-level participants occasionally remarked about the impact of competitive strategies on them personally or on the groups of which they were a part.

- The ability to engage creatively and productively in competition planning and analysis comes naturally to few people. Within limits, however, it can, and should, be taught. The military staff schools (mainly O4/O5 level military officers) and senior Service colleges (O5/O6 level military officers and comparable grade civilians) are the logical places to do this. In addition to providing a certain level of formal classroom instruction, student task forces could be established or an institution's research program could be adapted to provide opportunities for students to produce materials that could be entered into the larger DoD competitive strategies program.

- People who get involved with competitive strategies must understand that they may be taking professional risks. The Air Force officer on Task Force I who had the courage to propose a greater role for unmanned aerial systems in his proposal for countering Soviet air operations knew this intuitively. But he still went about his work in a commendably professional manner. It is rare when government provides adequate incentives and rewards for people who can do well what is involved in competition planning and analysis and similar forward-looking, creative enterprises. Within the DoD, more incentives

need to be created to encourage talented people to participate in this kind of work.

### 5.1.6 Analysis Methods and Tools

- Competitive strategies, while seemingly straight forward both in concept and method, is intellectually quite sophisticated, replete with subtlety and nuance, and thus a challenge for many to comprehend, much less practice. Indeed, more than a few find it counterintuitive. The oft-heard notion that American society, including its military establishment, is culturally astrategic, or even allergic to the idea of strategy in any form, bears heavily on those who would attempt to create and institutionalize a competition planning activity and then exercise it routinely .

- The key concepts in competition planning; the four-layer, hierarchical planning model; the suggested planning sequence; and the nine functions or requirements that analysis must be able to carry out in order to support competition planning, as reviewed in Chapter 3, can help planners and analysts accomplish their respective tasks far more systematically and comprehensively than heretofore. Had these aids been available and used by those involved in competitive strategies in the past, it is almost certain that their job would have been easier and their results improved.

- Quantitative data, games, computer simulation models, and other analytic tools and techniques have an important role to play in competitive strategies. But no individual tool or set of tools, however refined, can, or should, be relied on to provide "the answer" to a competition planning problem or the definitive evaluation of a particular proposed strategy or portfolio of strategies. Analytic tools should inform and otherwise support analysis, not substitute for it.

- Whereas models that have been built to analyze considerations of deterrence and warfighting can continue assist the competitive strategies process, they are not fully adequate for dealing with long-term strategies. As a matter of first principles, there are some important differences in the assumptions and other basic underpinnings of most of the current models that must be addressed when developing tools adequate to support competition planning and analysis. In general, the

traditional analysis tools and methods are most appropriate for analyzing only the first move of the minimum three-move sequence central to the competitive strategies framework.

- Computer-based combat simulations whose major measure of effectiveness (MOE) involves piston-like FEBA movements derived from Lanchester-type attrition calculations based on the employment of a select few firepower-producing systems (e.g., Combat IV and TACWAR used by the War Game Committee, discussed earlier) long have been criticized by defense analysts, even as they have tended to dominate defense analysis. Whatever their utility in the past, these tools quickly are becoming less and less relevant to the kinds of analytic problems that increasingly face defense planners, analysts, and policymakers. This is even more so the case in the realm of long-range military competition planning.

- There is a particularly pressing need to establish a community consensus on MOEs for long-term planning and competition other than combat, as well as for analyzing the full (including nonlinear) effects of advanced technology weapons and supporting systems. The ability to integrate the effects of uncertainty, including "chaos theory," logically should be considered here, as well.

- In light of the time it took for the War Game Committee and its supporting contractors to prepare and run the simulation models used in their work -- to the extent that there was insufficient time to conduct multiple runs -- it is clear that there continues to be a need for "quick games," both as preliminary screening devices and as tools for coming to grips, in at least a preliminary way, with major sensitivities in a particular analysis.

- For all of their imperfections, at least there were generally accepted models available to conduct a campaign-level, air-land analysis of war in Europe. This is less so the case for the ability to model maritime campaigns, military operations in space, the contribution of C3I to warfare in general, including the ability to conduct or counter "information warfare," and the like.

- There is, then, a need to continue to improve and refine existing analytic

tools and techniques and to develop new ones, including robust and flexible gaming and modeling architectures, data bases, measures of merit, and even basic methodologies, for advancing the state of the art in competition planning and analysis.

- The criteria that analysis tools to support competitive strategies must meet include the ability to examine both the near term and the far term over two decades or more, including issues of long-term resource trade-offs; sensitivity to changes in the competitive environment; sensitivity to Soviet, other competitor, and third player goals, strategies, and actions; and an orientation to key factors in the state of the competition, especially military balances, contingency outcomes, and the competitive positions of the two sides.

- Meanwhile, planners, analysts, and policymakers must work with what they currently have at their disposal. As clearly indicated by the analysis presented in Chapter 4 and summarized in the following section, those who have been involved in competitive strategies to this point have not adequately exploited the tools already available. This would seem to call for a deliberate effort to inform those selected to participate in the program about what they have to work with, beginning with the basic competitive strategies concept and methodology.

### 5.1.7 Planning for the Long-Term Competition

- The nine analysis functions or requirements posed by competitive strategies were met very unevenly in the four major analytic activities of interest. Some were satisfied reasonably well, while others were all but overlooked. Those that received the least attention included the following: determine Soviet goals and strategies; determine third player goals and strategies; set goals for the competition; evaluate alternative strategies; and evaluate portfolio management alternatives. The task forces generally set goals for their respective competition subareas (layer 3 of the proposed hierarchical planning approach), but there was no overarching national, or even departmental, strategic plan (layer 2 of the hierarchy) for the competition to provide strategic context for their work.

- The four primary analysis tools currently available and capable of supporting competition planning were employed only infrequently.

Military contingency analysis, including both its formal and informal variations, was called on the most, and Soviet-style emulative analysis the least, especially in the case of the task forces. Except for the efforts of the War Game Committee, political-military gaming, like emulative analysis, represented a missed opportunity. To the extent that, in the future, task forces are given more time to do their work and provided resources to contract for outside gaming and emulative analysis support, these two tools may more fully come into their own as aids to competition planning and analysis. Military balance assessments did not contribute as much as one might have thought would have been the case. Part of the problem was that, because the military departments devote so little time and quality attention to this function, many of the analysts were not accustomed to working with military balances. They often tended, then, to rely on their own preconceived ideas, not all of which would stand up to close scrutiny. Then, too, part of the problem was that there was no one balance assessment, or set of assessments, available to inform Task Force II's examination of U.S. non-nuclear strategic capabilities. Looking across all of the tools and all of the analysis functions, logic, expert judgment, and off-the-shelf regional political-military analyses clearly were the tools of choice by those involved in competitive strategies. At the opposite extreme, strategic planning tools for businesses were not used at all.

- It is a major challenge even for bright, well informed people to project their thinking fifteen to twenty or more years into the future. It is even more difficult to think systematically through a minimum three-move sequence of postulated actions and reactions over that period. Typically, the first move is generally well thought out, since it is closest to the present, it is based on reasonably good information, and it involves dealing with a reasonably manageable number of uncertainties. However, the task of thinking through a plausible range of countermoves by the opponent, which then require U.S. counters still further removed in time, is a most demanding intellectual test, even for a seasoned professional planner.

Use Simulation

- The role of the intelligence function in all of this is hard to overstate. Representatives from across the intelligence community at many different levels should be involved early and then continuously thereafter in the competitive strategies process.

- The quality of the support provided to the DoD Competitive Strategies Initiative by the U.S. intelligence community was quite uneven. Their assessments of Soviet weaknesses and vulnerabilities, and their evaluations of the reports of the task forces, were extremely well done. They did not, however, even after repeated official and unofficial urgings, produce the context paper needed to help planners and defense executives alike understand the nature and implications of possible alternative Soviet futures. To produce such a paper, of course, would have been a major challenge, and would have called for a significant effort, with no guarantee of complete success, at least not initially. But the magnitude of the problem is certain only to worsen, as the Soviet Union continues to undergo fundamental change and the ranks of our actual and potential competitors continue to grow. To the extent that the intelligence community continues to fall short in this critical area, especially given the times in which we live, it risks being questioned as to just how relevant it is to strategic planning, in general, and to the DoD process of planning for the long-term military competition, in particular.

- Creating lists of enduring U.S. strengths and enduring opponent weaknesses is an important task early in the competition planning process. As already mentioned, the intelligence community performed a valuable service in this area early in the program. The very act of assembling these thoughts can be quite illuminating. However, having produced such lists, it is not always easy to find a good fit between the various enduring strengths and weaknesses. Some strengths are important to the U.S. simply because they underwrite how we wish to do our military business in general. On the other hand, some opponent weaknesses either are not interesting or are not exploitable (i.e., capable of being turned into true vulnerabilities) within the capabilities and limitations of the U.S. and Western military establishments planning against them. But a good fit between enduring strengths and enduring weaknesses must be established before serious long-range competition planning can begin in earnest.

- Given the enduring nature of U.S. and Western strengths in technology, both in the laboratory and as embodied in fielded systems, and given enduring Soviet weaknesses here and the concern they long have expressed over the implications of this basic fact of competition, it is

perhaps only natural that U.S. planners and analysts have tended to stress the technology and hardware dimensions of the competition. It must be borne in mind, however, that operational and organizational concepts, training, policies, and other kinds of "brainware" are also potentially important ingredients of a competitive strategy.

- Given the potentially very important contribution that highly advanced systems and leading-edge technologies can make to particular competitive strategies, it is difficult to imagine how serious competition planning and analysis can be conducted lacking a studied consideration of special-access or black programs. With due regard for their sensitivity, procedures should be established to ensure that adequate information is provided on potentially applicable programs.

- Planners, in crafting their proposed initiatives, need to address realistically the question that forms the fundamental essence of strategic planning: "How?". Absent an actionable answer to this question, whatever else the planners have done, they have not produced a true strategy. Real strategy, of course, eventually must come to grips with issues of availability, affordability, producibility, and relative priorities. It is important, however, not to introduce these considerations too early in the planning process, as it can stifle creative thinking.

- As the work of Task Force II makes clear, arms control should be a major consideration in any competitive strategies analysis.

- Competition planning, to be most effective, must be an iterative process. Thus, feedback loops consciously must be built into the process and the environment (as it involves, for example, the U.S., its competitors, both sides' friends and allies, and other third parties) must be monitored sufficiently to generate the needed informational inputs. All major organizations involved in the DoD-level competition planning process have a role to play here. The responses of the competitor, as discerned by the intelligence community, are particularly critical. A system of regular reporting should be established to facilitate this process.

- Overall, the quality of the products created through the competitive strategies process varied considerably. The same was true for the contents of individual items produced. Senior defense executives must, then, exercise care in how they make use of these materials. Blanket

go/no-go judgments with respect major bodies of analysis involving several related products, or even regarding individual reports, are generally ill-advised. The prudent approach is to look at the various contributions as a whole, but then take the time to mine them selectively for useful ideas.

### 5.1.8 Accomplishments

- As this report makes clear, the DoD competitive strategies program experienced its share of disappointments, frustrations, and missed opportunities. It was not, however, entirely devoid of achievement. Selected specific accomplishments included the following:

  - A decision by a defense secretary to create and institutionalize a department-level, long-range competition planning and analysis activity in the DoD, managed by the Secretary himself.

  - The regular involvement of many people, both civilian and military, and at many levels, in competitive strategies.

  - Active participation by the major defense-related intelligence agencies in various phases of the work, including the preparation of several special assessments.

  - Development of new and different combined arms operational concepts for war in Europe and beyond featuring, *inter alia*, a variety of unmanned aerial systems; extended range, ground-based, cross-corps fire support; operational-level maneuver forces; and operational-level fire support provided to engaged forces by naval platforms delivering significant numbers of cruise missiles.

  - Creation of imaginative, detailed applications of maritime operations both in support of, and separate from, air-land operations in Central Europe.

  - Planning for modeling theater-level combat operations, integrating both current and future advanced technology systems, including special-access programs.

- Efforts made to simulate the integrated electronic battlefield, characterized by multiple sensors, data fusion, and a variety of mobile systems and smart warheads.

- Direct involvement of the CINCs, including the preparation of a plan by USEUCOM for capitalizing on competitive strategies in the European theater.

- Inclusion of non-standard military options by the Joint Staff in the Chairman's Net Assessment for Strategic Planning (CNASP).

- Courses in competitive strategies included as part of the National Security and Defense Management curricula at the Naval Postgraduate School, Monterey, California, and lectures and competitive strategies seminars at the Naval War College, Newport, Rhode Island.

- Close attention shown, and great concern expressed, by the Soviets themselves. At the very least, they may have been apprehensive that the U.S. was taking a more systematic approach to strategic competition planning, an area where they felt they long had held a major advantage, and so wanted the U.S. to terminate its competitive strategies program. The irony is that the available evidence at least suggests that the DoD Competitive Strategies Initiative may have had a greater impact in the Soviet Union than it did in the United States.

- In sum, enough organizations and individuals at different levels were involved, enough good work was done, and enough interesting insights and suggestions were offered, to conclude that, on balance, competitive strategies, as it was practiced in the Department of Defense between 1986 and 1990, was at least a qualified success.

## 5.2 RECOMMENDATIONS

Given the analytic requirements specified for this three-phase program of work, and in light of the results of the research and analysis presented in this volume, the following recommendations are made with respect to the conduct of the next phase of this

research program:

- Research should be aimed at improving the four analysis tools that have the greatest potential for supporting long-range competition planning: military balance assessments, Soviet-style analysis and other forms of emulative analyses, competition planning games, and military contingency analyses.

- Special attention should be directed toward improving the selection and use of analytic measures in competition planning.

## ENDNOTES TO CHAPTER 5

1. A number of principles around which the lessons learned/conclusions in this chapter were developed are discussed in Perry M. Smith, Jerrold P. Allen, John H. Stewart II, and F. Douglas Whitehouse, *Creating Strategic Vision* (Washington, D.C.: National Defense University Press, 1987). Refer to "the fifteen laws of long-range planning," pp. 12-22.

# EPILOGUE

Not long ago, a retired military officer, who had been involved with competitive strategies while serving with his Service's headquarters staff in the Pentagon, remarked that the fundamental problem with competitive strategies, as it was practiced in the Pentagon, was bureaucratic and political; and it reduced to the issue of "who gets to decide." He made it clear, however, that, at least when it came to the defense budget, it was for the Services to "propose" and for the Secretary of Defense to "dispose," and with as little substantive amending as possible.

But those who understand the reason for the creation of the Department of Defense in the first instance, and those who believe that the basic concept of civilian control of the military should be more than a just a slogan, have another view. They believe that, since the Secretary of Defense is ultimately responsible to the President of the United States for the entire Department of Defense, since the Secretary of Defense is the one required to sign the defense budget that gets submitted to the President, and since the Secretary of Defense is in the chain of command that runs from the President, through him, directly to the combatant commanders and the fighting forces, and this chain excludes the military Services and the Joint Chiefs of Staff, he has both the responsibility and the right to ensure that the defense program accords with his personal sense of what is needed and what is right.

The Secretary of Defense requires assistance and support from everyone in the department to do his job well. But only he, his staff, and the various other agencies and activities that support him directly have the responsibility to take an institution-wide view -- all departments, offices, and agencies, both civilian and military -- and make judgments that have the best interests of the entire DoD and the overall security interests of the nation in mind. By contributing to the Secretary's ability to impose a more systematic, long-range perspective on DoD strategic planning, and attempting to assist him in making the tough calls that go with it, it was perhaps inevitable that the Department of Defense Competitive Strategies Initiative ultimately would fall victim to this most basic of philosophical differences and bureaucratic tensions in the DoD.

Much has been learned by everyone who was involved with competitive strategies, regardless of their position on the issues. Secretary Cheney has before him an opportunity to put things into proper perspective, reorient and reorganize as necessary, and move forward purposefully with long-range military competition planning in the Department of Defense.